



Bill Johnson

OptionsUniversity®

# Options Trading 101

From Theory to Application



New York

# Options Trading 101

## From Theory to Application

by Bill Johnson

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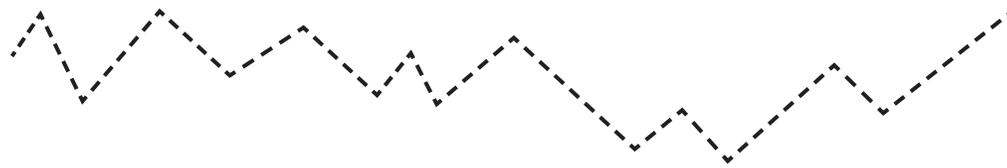
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# Table of Contents

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<b>INTRODUCTION .....</b>	<b>xi</b>
Why Is There an Options Market? .....	xii
Risk for Sale .....	xiv
<b>Chapter One: Introduction to Options .....</b>	<b>1</b>
What Is an Option? .....	1
Option Sellers .....	2
The Long and Short of It .....	4
Getting Out of a Contract .....	7
The Options Clearing Corporation (OCC) .....	9
More Option Terminology .....	10
Underlying Asset .....	10
Strike Price (Exercise Price) .....	11
Expiration Date .....	12
American Versus European Styles .....	12
Physical Versus Cash Delivery .....	13
Exercise Versus Assign .....	14
Options Basics .....	15
Options Are Standardized Contracts .....	17
Understanding a Real Call Option .....	19
Bid and Ask Prices .....	22
Understanding a Real Put Option .....	26
Intrinsic and Time Values .....	27
Moneyness .....	31
Parity .....	34
Wasting Assets .....	34

## Options Trading 101

---

Time Decay .....	35
How Are Options Similar to Stocks?.....	36
How Do Options Differ from Stocks? .....	36
<b>Chapter One Questions .....</b>	<b>37</b>
<b>Chapter One Answers .....</b>	<b>42</b>
<b>Chapter Two: Option Pricing Principles.....</b>	<b>47</b>
Principle #1 .....	47
Principle #2 .....	54
Square-Root Rule.....	56
Principle #3 .....	57
Expiration Values for Put Options.....	58
Theory Versus Reality .....	59
Principle #4 .....	64
The Time Value of Money.....	65
Minimum Value for a Put Option Prior to Expiration .....	69
Principle #5 .....	69
Maximum Value for Puts .....	70
Principle #6 .....	71
What Gives an Option Value? .....	76
Risk and Reward.....	81
Pricing Game.....	82
Price Is the Equalizer .....	84
Lotteries.....	86
Comparing Returns Among Funds and Managers .....	87
Option Price Behavior .....	89
Simplistic Stock Price Model .....	92
Deep-in-the-Money Options.....	94
Out-of-the-Money.....	95
Delta of an Option .....	98
Relationship Between Call and Put Deltas .....	101
<b>Chapter Two Questions.....</b>	<b>103</b>
<b>Chapter Two Answers .....</b>	<b>107</b>

## Table of Contents

---

<b>Chapter Three: Profit and Loss Diagrams.....</b>	<b>113</b>
Characteristics of Profit and Loss Diagrams.....	120
Closing an Option.....	122
What's the Best Strategy? .....	124
<b>Chapter Three Questions .....</b>	<b>131</b>
<b>Chapter Three Answers .....</b>	<b>135</b>
<b>Chapter Four: Option Market Mechanics .....</b>	<b>141</b>
Option Symbols .....	141
Option Expiration Cycles .....	146
New Rules Create Shorter-Term Contracts .....	147
LEAPS .....	150
Which Cycle Is My Stock On? .....	153
Double, Triple, and Quadruple Witching .....	157
Contract Size (The Multiplier) .....	157
Reverse Splits .....	161
Contract Adjustments for Special Dividends.....	164
Open Interest .....	166
Early Exercise .....	171
Call Options .....	172
Early Exercise on a Non-Dividend-Paying Stock .....	172
Mathematical Examples .....	175
Exercising a Call to Collect a Dividend .....	177
Put Options.....	177
Mechanics of Exercising a Call to Collect a Dividend.....	179
What Is the Ex-Dividend Date?.....	180
Why Is There So Much Confusion in Practice? .....	180
Does It Really Matter If Stock Holders Get the Dividend?.....	182
Rules Violation: Selling Dividends .....	183
A Real Life Example.....	184
Types of Options Orders.....	185
Making the Trade .....	186
Price .....	186
Market Order.....	186
Multiple Fills .....	187

## Options Trading 101

---

Limit Orders.....	188
Tick Size .....	189
Why Can't I Guarantee the Execution and the Price? .....	189
Or-Better Orders.....	189
All-or-None (AON) .....	191
Time Limits.....	192
Day Orders .....	192
Good 'til Cancelled Orders (GTC) .....	193
Stop and Stop Limit Orders .....	193
Stop Limit Orders.....	195
Option Stop Orders.....	196
Limit Order Display Rule ( <i>intro</i> ) .....	196
Understanding the Quote System .....	197
Limit Order Display Rule.....	202
Leaning Against the Book .....	204
The Economics of Large Bid-Ask Spreads.....	205
<b>Chapter Four Questions.....</b>	<b>210</b>
<b>Chapter Four Answers.....</b>	<b>214</b>
<b>Chapter Five: Put-Call Parity and Synthetic Options.....</b>	<b>219</b>
Filling an Option Order .....	220
The Put-Call Parity Equation.....	223
Synthetic Options.....	236
Synthetic Long Stock.....	244
Synthetic Short Stock .....	246
Added Insights into Synthetics.....	248
All Combinations of Synthetics .....	249
Real Applications for Synthetics .....	249
Creating a Call Option .....	251
Are Options Bad for the Market? .....	252
Valuing Corporate Securities as Options .....	253
Using the Black-Scholes Model ( <i>intro</i> ) .....	254
<b>Chapter Five Questions .....</b>	<b>256</b>
<b>Chapter Five Answers .....</b>	<b>260</b>

## Table of Contents

---

<b>Chapter Six: An Introduction to Volatility .....</b>	<b>265</b>
The Frog and the Roo .....	265
A Simple Pricing Model .....	268
Fair Value: How Much Is a Bet Worth? .....	271
Fair Value Depends on Perspective .....	275
The Black-Scholes Option Pricing Model .....	276
Using the Black-Scholes Model.....	278
Why You Need to Understand Volatility .....	279
Direction Versus Speed .....	280
Price and Value .....	281
Option Prices and Point Spread.....	283
Volatility Moves Sideways .....	286
Using Volatility.....	289
Time Decay?.....	296
Creating a Winning Trade .....	300
Volatility Is Relative .....	303
Which Strike Should I Buy? .....	304
How Option Prices Are Affected by the Model Factors.....	307
Stock Price .....	307
Exercise (or Strike) Price .....	308
Interest Rates .....	308
Volatility .....	309
Time to Expiration .....	309
Dividends .....	310
Some Final Thoughts.....	310
<b>Chapter Six Questions .....</b>	<b>312</b>
<b>Chapter Six Answers.....</b>	<b>316</b>
<b>Chapter Seven: Covered Calls .....</b>	<b>321</b>
Covered Call Strategy.....	322
Philosophy .....	323
Covered Call Basics .....	324
Return If Exercised.....	327
Static Return .....	327
Breakeven Return .....	328

## Options Trading 101

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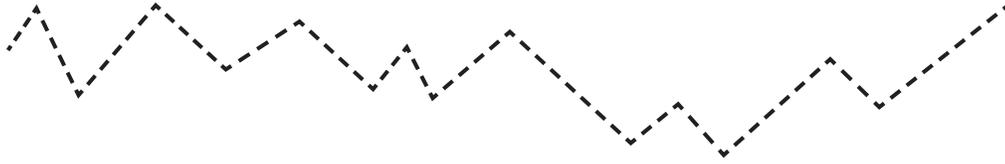
Max Gain, Max Loss .....	329
Do I Need to Stay in the Contract Until Expiration? .....	329
Example .....	330
Which Strike Should I Write? .....	333
Writing Out-of-the-Money Calls.....	334
Writing At-the-Money Calls.....	335
Risk of Covered Calls.....	336
Writing In-the-Money Calls .....	337
Which Expiration Should I Write?.....	339
Covered Call Rationale.....	340
Covered Call Trap .....	342
Synthetic Positions .....	344
Hedging with Covered Calls.....	345
Will I Get Assigned Early? .....	347
How Will I Know If I'm Assigned (Called Out of a Stock)? .....	348
Buy-Writes.....	349
Roll-Outs.....	351
Roll-Downs .....	352
In The Long Run, Covered Calls Are Less Risky.....	353
<b>Chapter Seven Questions .....</b>	<b>355</b>
<b>Chapter Seven Answers .....</b>	<b>359</b>
<b>Chapter Eight: Long Calls and Long Puts.....</b>	<b>365</b>
Protection .....	366
Leverage.....	374
Risky Uses of Leverage .....	379
Conservative Uses of Leverage .....	280
Diversification.....	381
A Brief Detour on Diversification .....	382
Rolling with Call Options .....	384
When Should You Roll Up?.....	387
Long Puts .....	392
<b>Chapter Eight Questions .....</b>	<b>396</b>
<b>Chapter Eight Answers .....</b>	<b>400</b>

## Table of Contents

---

<b>Chapter Nine: Vertical Spreads .....</b>	<b>405</b>
Vertical Spreads .....	407
Max Gain, Max Loss, and Break Even .....	409
Vertical Spreads Using Puts .....	410
Vertical Bear Spreads .....	411
Rationale for Spreads .....	415
Cheap or Chicken.....	415
Early Assignment .....	416
Vertical Spread Examples .....	417
Risk and Reward Revisited .....	422
Price Behavior of Vertical Spreads .....	424
How Much Time? .....	436
Chapter Nine Questions.....	428
Chapter Nine Answers.....	432
<b>Chapter Ten: Hedging with Options .....</b>	<b>437</b>
Hedging.....	437
Betting Against Yourself .....	439
What Kind of Risk-Takers Are We? .....	441
We Really Despise Risk.....	442
Stock Swap .....	443
Laddering Hedging Strategy .....	449
Selling Spreads Against Stock .....	449





# Introduction

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Chances are you're reading this book because you're brand new to options. You've heard about them but can't really explain to someone else what they are. You'd like to start trading them but you have lots of questions and nobody seems to have the answers you're looking for. This book is for you!

At Options University, we believe there is only one way to teach; you must start by learning the most fundamental concepts. While it is possible to provide a quick overview and send you on your way with a false sense of confidence, we know that will only be detrimental in the long run. That is the “ready, fire, aim” approach often used by most books and instructors. Instead, we make sure you truly understand the essence of an option and what makes it different from stock. Once we examine these core competencies, we will then introduce you to some basic strategies that you can use immediately. But don't underestimate these strategies just because they're labeled as basic. On the contrary, the basic strategies are what often pack the most punch and are most widely used – even by professional traders. Advanced strategies, even though they appear far more complex, are just moderate extensions of the basics. If you understand the concepts presented in this book, you will make a smooth transition into advanced strategies should you choose to continue further with options trading. Most important, you will have enough knowledge to confidently use the most powerful trading tool ever to hit the financial markets.

Before we get started, let's clear up the one unfair misconception that you have probably heard: Avoid options because they are too risky.

As you will find out, options were created to *manage* the risks and rewards of stock investing, which is certainly a good feature. However, if you talk to investors or traders about options you will find there are a myriad of opinions. To some investors, the word “options” suggests feelings of risk, gambling, speculation, and

reckless investing. To others, options mean hedging your bet, insurance, and good money management. How can the same asset cause two opposing views? The reason is that both can be correct. *It depends on how you're using the options.* Credit cards are a good analogy. One person can use them to spend excessively and end up in bankruptcy while another uses them to pay for an emergency car repair after being stranded on a deserted road. Are credit cards good or bad? Just as with options, the answer depends on how they are used and managed. Be wary of people who tell you to not waste your time with options because they are too risky, because we can show you strategies that completely *eliminate* risk. What's important is that you are able to separate which feature of an option is a benefit *for you* and which is a risk *for you*. A risk to someone else may be a benefit for you, and the options market will let you earn money for assuming that risk.

After reading this book, you will know which strategies are right for you and which are too risky. It all depends on your goals and risk tolerances. We want to show you how options can be used to enhance and strengthen your current investment style.

Those who choose to not learn about options may be overlooking the most important and powerful investment tool available. It is our experience that the people most skeptical of options are the ones who often see the most benefits. We believe, by the end of this book, you will find at least one new strategy that appeals to you, and that means you'll be a little bit better than you are at this point. And that's how good investors eventually become great – by continually getting a little bit better. At least take the time to understand options; you can always decide to not use them. But our guess is that this book will only open the doors to a new and exciting investment world you never thought possible. So let's begin our journey and answer a frequently asked question: Why is there an options market?

### Why Is There an Options Market?

New traders and investors are often overwhelmed by the different financial products available. They are kept busy enough trying to understand and choose between stocks, preferred shares, bonds, mutual funds, closed-end funds, ETFs (Exchange Traded Funds), UITs (Unit Investment Trusts), REITs (Real Estate Investment Trusts), and CMOs (Collateralized Mortgage Obligations).

And now you want to add options?

## Introduction

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You must understand that whenever a new product is created, there are always new variations designed to fill slightly different needs. For example, when the Model T was first invented, it solved the broad problem of transportation. People didn't really care what it looked like. In fact, it is rumored that Henry Ford once quipped, "Customers can have any color they want as long as it's black." The Model T was only meant to solve the broader issues of transportation, namely, getting from Point A to Point B.

But once the Model T appeared, others soon came to market with modifications to solve different problems. Today we have many variations such as SUVs, vans, four-wheel drive trucks, extended cabs, crew cabs, compacts, hybrids, and convertibles. While they are all forms of transportation, they fill different needs.

The financial markets are no different from any other product. As problems arise, new financial products are developed to handle them. The stock market was created as a way for publicly-traded companies to raise cash. For example, in March 1986, Microsoft had its IPO (Initial Public Offering) and sold 2.8 million shares for \$21 per share. That amounted to an instant check for \$58,800,000 for Microsoft. In a relatively short time and very efficiently, Microsoft created nearly 59 million dollars with which the company could grow.

The creation of the stock market solved a very important problem of raising capital but it also introduced a new problem. That problem is risk. If you buy shares of stock you are buying a piece of the company, and that purchase creates the potential for high rewards. Many investors who bought shares of Microsoft in 1986 are millionaires many times over today. But that potential for high reward comes with the potential for high loss. In early 2001, Enron was regarded as a market leader in the energy trading business and one of the largest corporations in the world. Later that year, it filed for what was to become the largest bankruptcy in United States history. Many investors lost their life savings by investing in Enron. So are stocks good or bad? Obviously, it depends on what happens to the stock's price – and that is something we cannot know beforehand. In other words, there is risk associated with stock investing. In order to make the financial markets run smoother, it would be nice to invent ways to *manage the risk* involved with stock investing. And that's exactly the problem that options solved.

### Risk for Sale



Believe it or not, the options market was designed to allow investors to either accept or transfer risk. The options market is technically a market for dealing in risk. You're probably wondering who would ever want to willingly accept risk. Odd as that may sound, we do it all the time. When you buy an auto insurance policy, you are paying a fee to the insurance company. In exchange for that fee, it is accepting the risks associated with you having an accident. The insurance company is *accepting* risk in exchange for cash. You are paying cash in exchange for *transferring* the unwanted risk. The agreement between you and the insurance company creates an intangible market – the market for risk. So to answer the question of who would ever willingly accept risk, you must remember that someone is getting paid to accept that risk. If the fee is high enough, you can be sure that someone will step in and accept the risk.

This highlights why the options market is perceived to be so risky. After all, it is a market whose only product for sale is risk. As stated before, the riskiness of options depends on how you're using them, but now we can state it a little more clearly: It depends on whether you are transferring or accepting risk. None of us would consider the car insurance market to be risky since we use it to transfer risk away from us. However, the insurance companies see it quite differently. It depends on which side of the agreement you're on.

The options market works a simple principle: While many investors wish to reduce risk, there are some people who actively look for risk. The latter are called *speculators*. Speculators are willing to gamble for big profits; they aren't afraid to take a long shot if there is potential for big money. People who patronize casinos and play state lotteries are acting as speculators. If there are speculators out there who are willing to accept risk in the stock market, wouldn't it make sense to be able to transfer it to them? Of course, in order to make it worth their while, we will have to pay them some money to accept that risk. So if there is a risk you wish to avoid, you can do so by purchasing an option. Conversely, if there is a risk you're willing to assume, you can get paid through the options market to accept the risk for someone else. So while one investor may be using options to avoid risk, it is possible that the person on the other side of the trade is a speculator willing to accept that risk. Investors who do not understand this

## Introduction

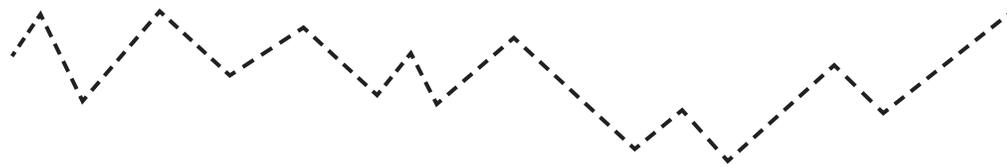
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interplay between investors and speculators hear both sides of the story and that's where the confusion comes in.

Unfortunately, this confusion often makes many investors avoid options altogether. This is a big mistake in today's marketplace. As our economies expand, our financial needs increase; That's why you see so many new financial products coming to market. Each product is different – sometimes only in small ways – but each provides the solution to a specific problem. Options allow you to selectively pick and choose the risks you want to take or avoid. *And that is something that cannot be done with any other financial asset.* Because you can select the individual risks to take, options can be used in very conservative as well as very speculative ways. It's all up to you. If you'd like to make the stock market a less risky place, options are your answer. If you'd like to increase the risk and speculate more efficiently for bigger profits, options are your answer too.

Let's get started and find out how you can improve your investments from this mysterious market.





## Chapter One

# Introduction to Options

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### What Is an Option?

Options are simply legally binding agreements – contracts – between two people to buy and sell stock at a fixed price over a given time period.

There are two types of options: **calls** and **puts**. A call option gives the owner the right, not the obligation, to *buy* stock at a specific price over a given period of time. In other words, it gives you the right to “call” the stock away from another person. A put option, on the other hand, gives the owner the right, not the obligation, to *sell* stock at a specific price through an expiration date. It gives you the right to “put” the stock back to the owner. Option buyers have rights to either buy stock (with a call) or sell stock (with a put). That means it is the owner’s choice, or *option*, to do so, and that’s where these assets get their name.

Now you’re probably thinking that this is sounding complicated already. But options are used under different names every day by different industries. For instance, we are willing to bet that you’ve used something very similar to a call option before. Take a look at the following coupon:



The way pizza coupons and call options work is very similar. This pizza coupon gives the holder the *right* to buy one pizza. It is not an obligation. If you are in

## Options Trading 101

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possession of this coupon, you are not required to use it. It only represents a right to buy. There is also a *fixed price* of \$10.00. No matter how high the price of pizzas may rise, your purchase price is locked at \$10.00 if you should decide to use it. Last, there is a fixed time period, or *expiration date*, for which the coupon is good.

Now let's go back to our definition of a call option and recall that it represents:

- 1) **Right to buy stock**
- 2) **At a fixed price**
- 3) **Over a given time period**

You can see the similarities between a call option and pizza coupon. If you understand how a simple pizza coupon works, you can understand how call options work.

Now let's take a look at a put option from a different perspective. Put options can be thought of as an insurance policy. Think about your car insurance, for example. When you buy an auto insurance policy, you really hope that you will not wreck your car and that the policy will "expire worthless." However, if you should total your car, you can always "put" it back to the insurance company in exchange for cash. Put options allow the holder to "put" stock back (sell it) to someone else in exchange for cash. Remember, if you buy a put option, you have the:

- 1) **Right to sell stock**
- 2) **At a fixed price**
- 3) **Over a given time period**

As you will discover, the mechanics of calls and puts are exactly the same; they just work in the opposite direction. If you buy a *call*, you have the right to *buy* stock. If you buy a *put*, you have the right to *sell* stock.

### Option Sellers

We know that buyers of options have rights to either buy or sell. What about sellers? *Option sellers have obligations*. If you sell an option, it is also called "writing" the option, which is much like insurance companies "write" policies. Buyers have rights; sellers have obligations. Sellers have an obligation to fulfill

## Introduction to Options

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the contract if the buyer decides to use their option. It may sound like option buyers get the better end of the deal since they are the ones who decide whether or not to use the contract. It's true that option buyers have a valuable right to choose whether to buy or sell, but they must *pay* for that right. So while sellers incur obligations, they do get paid for their responsibility since nobody will accept an obligation for nothing.

There are some traders who will tell you to always be the buyer of options while others will tell you that you're better off being the seller. Hopefully, you already see that neither statement can always be true, because there are pros and cons to either side. Buyers get the benefit of "calling the shots," but the drawback is they must pay for that benefit. Sellers get the benefit of collecting cash but they have a drawback in that there are potential obligations to meet. What are the sellers' obligations? That's easy to figure out once you understand the rights of the buyers. The seller's obligation is exactly the opposite of the buyer's rights. For example, if a call buyer has the *right to buy* stock, the call seller must have the *obligation to sell* stock. If a put buyer has the *right to sell* stock, the put seller has the *obligation to buy* stock.

These obligations are really *potential* obligations since the seller does not know whether or not the buyer will use his option. For example, if you sell a call option you *may* have to sell shares of stock, which is different from saying that you will definitely sell shares of stock. A call seller will definitely have to sell shares of stock *if* the call buyer decides to use his call option and buy shares of stock. If you sell a put option, you *may* have to buy shares of stock. A put seller definitely must buy shares of stock *if* the put buyer decides to use his put option and sell shares of stock.

It's important to understand that options only convey *rights* to buy or sell shares of stock. For example, if you own a call option, you do not get any of the benefits that come with stock ownership such as dividends or voting privileges (although you could acquire shares of stock by using your call option and thereby get dividends or voting privileges). But by themselves, options convey nothing other than an agreement between two people to buy and sell shares of stock.

Now that you have a basic understanding of call and put options, let's add some market terminology to our groundwork.

### The Long and Short of It



The financial markets are filled with colorful terminology. And one of the biggest obstacles that new option investors face is interpreting the jargon. Two common terms used by brokers and traders are “long” and “short,” and it’s important to understand these terms as applied to options.

If you buy any financial asset, you are “long” the position. For example, if you buy 100 shares of IBM, using market terminology, you are long 100 shares of IBM. The term “long” just means you own it. Likewise, if you buy a call option, you are “long” the call option.

If “long” means you bought it then “short” means you sold it, right? Not quite. Some people will tell you that “short” just means you sold an asset, but that is an incomplete definition. For example, if you are long 100 shares of IBM and then sell 100 shares you are not short shares of IBM even though you sold 100 shares. That’s because you bought the shares first and then sold them, which means you have no shares left.

However, let’s say you bought 100 shares of IBM and then, by accident, entered an order online to sell 150 shares of IBM. The computer will execute the order since it has no way of knowing how many shares you actually own. (Maybe you have shares in a safe deposit box or with another broker.) But if you really owned only 100 shares then you would be “short” 50 shares of IBM. In other words, you sold 50 shares you don’t own. And that’s exactly what it means to be short shares of stock. It means you sold shares you do not own. However, when we short shares in the financial market, it’s not meant to be by mistake – it is done intentionally. How can you intentionally sell shares you don’t own? You must borrow them. In order to further understand what it means to be “short” and how that applies to options, let’s take a quick detour to understand the basics of short selling.

Traders use short sales as a way to profit from falling stock prices. Assume IBM is trading for \$70 and you think its price is going to fall. If you are correct, you could profit from this outlook by entering an order to “short” or “sell short” shares of IBM. Let’s assume you decide to short 100 shares. Your broker will find 100 shares from another client and let you borrow these shares. Although this sounds like a lengthy, complicated transaction it takes only seconds to execute.

## Introduction to Options

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In terms of the mechanics, shorting shares is similar to making a purchase on your credit card. Your bank finds loanable funds from somebody else's account to let you borrow and you then have an obligation to return those funds at some time. How complicated is it to short shares of stock? About as complicated as it is to swipe a credit card at a cash register.

Let's assume you short 100 shares of IBM at \$70. Once the order is executed, you have \$7,000 cash sitting in your account (sold 100 shares at \$70 per share) and your account shows that you are short 100 shares of IBM – you sold shares that you do not own. Do you get to just take the \$7,000 cash, close the account and walk away? No, once you short the shares of stock, you incur an obligation to replace those 100 shares at some time in the future. In other words, you must buy 100 shares at some time and return them to the broker. Obviously, your goal is to purchase those 100 shares at a cheaper price.

Let's assume that the price of IBM later drops by \$5 to \$65 and you decide to buy back the shares. You could enter an order to buy 100 shares and spend \$6,500 of the \$7,000 cash you initially received from selling shares. Once you buy the 100 shares, your obligation to return the IBM shares is then satisfied and you are left with an extra \$500 in your account. In other words, you profited from a falling stock price. This profit can also be found by multiplying the number of short shares by the drop in price, or  $100 \text{ shares} * \$5 \text{ fall in price} = \$500 \text{ profit}$ . If you have shorted 300 shares of IBM, you would have ended up with a  $300 \text{ shares} * \$5 \text{ fall in price} = \$1,500 \text{ profit}$ . Of course, if the price of IBM had risen at the time you purchased them back, then you'd be left with a loss since you must spend more than you received to return the shares. If short selling still sounds confusing, just realize that the short seller generates profits in the same way as a stock buyer but by entering transactions in the opposite order. For instance, when you buy stock, you want to buy low and sell high. When you short stock, you want to sell high and buy low. If you short a stock and then buy it back at a higher price, you're left with a loss because you really bought high and sold low.

Short selling works because traders are obligated to return a fixed number of shares and not a fixed dollar amount. In our example, you shorted 100 shares with a value of \$7,000. Your obligation is to return 100 shares of IBM and not \$7,000 worth of IBM. If you can purchase the shares for less money than you received, you will make a profit.

## Options Trading 101

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This is not meant to be a course in shorting stocks but rather a way to understand what the term “short” really means when applied to the stock or options market. *Shorting means you receive cash from selling an asset you don't own and then incur some type of obligation.* In the case of shorting stocks, your obligation is that you must buy back the shares at some time.

If you short an option, you have sold something you don't own. You get cash up front and then incur some type of obligation depending on whether you sold a call or put. If you short a call, you get cash up front and have the obligation to sell shares of stock. If you short a put, you get cash up front and have the obligation to buy shares of stock. The cash is credited to your account immediately and is yours to keep regardless of what happens to the option. That is your compensation for accepting an obligation, much like the premiums you pay to an insurance company.



When you sell (short) an option you will receive cash, which is yours to keep regardless of what happens in the future.

The following table may help you to visualize the rights-versus-obligations relationships:

	LONG	SHORT
Call	Right to buy stock	Obligation to sell stock
Put	Right to sell stock	Obligation to buy stock

Notice that the long and short positions are taking opposite sides of the transaction. For instance, the long call (call buyer) must be matched with a short call (call seller). The long call has a *right* while the short call has an *obligation*. Rights and obligations are opposites. In addition, the long call gets to *buy* while the short call is required to *sell*. Buying and selling are also opposites.

For put options, the long put (put buyer) must be matched with a short put (put seller). As with call options, it is the long position that has the *right* while the short position has the *obligation* (opposites). The long put, however, has the right to *sell* while the short put is required to *buy* (opposites).

## Introduction to Options

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This arrangement is required to make the options market work. Both parties (the buyer and seller) cannot have rights. They can neither both buy nor both sell. One side has the right to buy (or the right to sell), while the opposite side has the obligation to complete the transaction.

This arrangement is often a source of confusion for new traders. They wonder how the option market can work if everybody has a right to buy or sell. The answer is that it is only the *long* position that has the rights. The *short* position has an obligation. It is important to understand this relationship when going through this book, especially when you get to strategies.



Long options have rights. Short options have obligations.

### Getting Out of a Contract



We just learned that you can get into an option contract by either buying or selling a call or put. But once you're in the contract, is there a way to get out of it at a later time? The answer is yes. All you have to do is enter a *closing transaction* (also called a *reversing trade*). In other words, you can always “escape” your obligations by simply doing the reverse set of actions that got you into the contract in the first place.

For example, if you are short an option and decide at a later time you don't want the corresponding obligation, you can get out of it by simply *buying* the options back. This is much like you do with shares of stock if you are short. However, just because you can get out of the contract doesn't mean that you can avoid any losses that may have accrued. The price you pay to get out of the contract may be higher and, in some cases, much higher than the price you originally received from selling it – just as when shorting shares of stock. But the point is that you can get out of a short option contract by simply buying it back.

If the idea of buying back a contract sounds confusing, think of the following analogy. You probably have a cell phone are locked into some type of agreement such as a one-year *contract*. Cell companies do this to prevent people from continually shopping around and jumping to the hot promotion of the month. However, your

## Options Trading 101

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cell provider will also have some type of “buy back” clause in the contract. That is, if you wish to get out of the agreement, you must pay a fixed amount of money, perhaps \$200, and you can escape your remaining obligations. If you pay this fee, the company cannot take you to court later and say that you didn’t fulfill your obligations. The reason is that you bought the contract back – it no longer exists between you and the company. That’s the fee they specified to end all obligations.

This is mathematically the same thing that happens when you buy back a contract in the options market. Although it is not a fee to end the contract, what you’re really doing is going long and short the same contract, thereby eliminating all profits or losses beyond that point. If you’re long the contract and you’re short the same contract, then you’ve effectively ended all obligations.

Likewise, you can get out of long call option by simply doing the reverse; that is, selling the same contract that you own. Because of this possibility, most option traders simply trade the contracts back and forth in the open market rather than using them to buy or sell shares of stock. As we will later see, trading option contracts is a big advantage because they cost a fraction of the stock price.



You can always get out of an option contract at any time by simply entering a reversing trade.

Let’s make sure you understand the concepts of long and short calls and puts by using our pizza coupon and car insurance analogies. If you are in possession of a pizza coupon, you are “long” the coupon and have the right, not the obligation, to buy one pizza for a fixed price over a given time period. In the real world, you do not buy pizza coupons; they are handed out for free. But that doesn’t put an end to our analogy because the basic idea is still there. Since you are holding the coupon, that means you possess the right to use it, and that’s the role of the long position. The pizza storeowner would be “short” the coupon and has an *obligation* to sell you the pizza if you choose to use your coupon. You have the right; he has the obligation.

If you buy an auto insurance policy you are “long” the policy and have the right to “put” your car back to the insurance company. The insurance company is “short” the policy; it receives money in exchange for the potential obligation of having to buy your car from you. Whether you make a claim or not, the insurance

## Introduction to Options

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company keeps your premium just as you will when selling options. That's its compensation for accepting the risk.

In the real world of car insurance, you cannot just force the insurance company to buy the car back for any reason. There are certain conditions that must be met; for example, the car must be damaged or stolen. You can't just obligate the insurance company because you don't like it anymore or because it has depreciated. However, in the real world of put options, you can sell your stock at a fixed price for *any* reason while your put option is still in effect. There are no restrictions. Of course, you wouldn't want to do that if the fixed price you'd receive is less than the current market price. The main point is that if you are long a put option, you call the shots. You have the rights. You have the "option" to decide. You have the right to sell your stock for that fixed price at any time during the time your "policy" is in effect.

### The Options Clearing Corporation (OCC)

Okay, this may sound good in theory but how do you know that the short positions will actually follow through with their obligations if you decide to use your call or put option?

The answer is that there is a clearing firm called the *Options Clearing Corporation*, or OCC. The OCC is a highly capitalized and regulated agency that acts as a middleman to all transactions. When you buy an option, you are really buying it from the OCC. And when you sell an option, you are really selling it to the OCC. The OCC acts as the buyer to every seller and the seller to every buyer. It is the OCC that guarantees the performance of all contracts. By performance we obviously do not mean profits but rather that if you decide to use your option, you are assured the transaction will go through. In fact, ever since the inception of the options market and the OCC in 1973, not a single case of unfair or partial performance has ever occurred. If you'd like to read more about the OCC, you can find their website at [www.OptionsClearing.com](http://www.OptionsClearing.com).

Before reading further, make sure you understand the following key concepts:



### Key Concepts

- 1) Long call options give the buyer the right to BUY stock at a fixed price over a given time period.
- 2) Short call options create the obligation to SELL stock at a fixed price over a given time period.
- 3) Long put options give the buyer the right to SELL stock at a fixed price over a given time period.
- 4) Short put options create the obligation to BUY stock at a fixed price over a given time period.
- 5) Option sellers (calls or puts) keep the cash regardless of what happens in the future.
- 6) The OCC acts as a middleman to all transactions.



### More Option Terminology

We're almost ready to talk about real call and put options but we first must go over some other market terminology that you'll need to understand. We just covered the terms "long" and "short," which are critical for understanding who has the right and who has the obligation with any particular strategy. But we have a lot more ground to cover before learning about strategies. Next, we must venture into the remaining terms we will be using throughout the book.

### Underlying Asset

In the pizza coupon example, we would say the *underlying asset* is a pizza. Notice that the coupon limited us to how many pizzas we can purchase; we cannot purchase all we want. In addition, the coupon is not good for any brand of pizza but only the one advertised on the coupon. Call and put options work in similar ways. The underlying asset for a call or put option is generally 100 shares of stock. There are exceptions (which we'll explore later in Chapter Four) to this rule such

## Introduction to Options

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as certain stock splits or mergers. But when options are first issued, they always represent 100 shares of the underlying stock.

The “brand” of shares we can buy is determined by the call or put option. For example, if we have a Microsoft call option, we have the right to buy 100 shares of Microsoft. In this case, Microsoft would be the *underlying stock*. The price of an option is tied to or *derived* by the underlying stock. Because of this, options are one of many types of *derivative* instruments. A derivative instrument is one whose value is derived by the value of another asset.

### Strike Price (Exercise Price)

In our example, the pizza coupon states a specific purchase price of \$10.00. No matter what the price of pizzas may be when you get to the store, you are locked in to the price of \$10.00. If this were an option, we’d call this “lock in” price the *strike price*, which is really a slang term that comes from the fact that we have “struck” a deal at that price.

Another name for the strike price is the *exercise price*. The reason for this is that if you choose to use your option, you must submit *exercise instructions* to your broker, which is handled with a simple phone call. With a pizza coupon you just “hand in” the coupon, but in the world of options you must “exercise” the option through your broker.

If you exercise a call option, you must pay the strike price (since you’re buying stock) and that’s why the strike price is also called the exercise price. It’s the price you will pay for exercising the option to purchase shares of stock. If you are short a call option, you’ll receive the strike price (because you’re selling stock). The exercise price is the price that will be paid by the long position and received by the short position.

The opposite is true for put options. If you exercise a put, you’ll receive the strike price since you are selling shares of stock. The short put will pay the strike price since he is the required to buy the stock. The exercise price is the price that will be received by the long put and paid by the short put.

We’ll talk more about exercising options later but, for now, just understand that the strike price and exercise price are two terms meaning the same thing. They both represent the fixed purchase or selling price.

### Expiration Date



Notice that the pizza coupon also has an *expiration date*. You can use this coupon at any time up to and including the expiration date. Equity options (options on stock) always expire on the third Friday of the expiration month. Technically speaking, equity options expire on Saturday following the third Friday but that is really for clearing purposes. That extra day (Saturday) gives the OCC (Options Clearing Corporation) time to match buyers and sellers while the contract is still legally “alive.” From a practical standpoint though, the last day to close or to exercise your option is the third Friday of the expiration month. After that, it’s no longer valid. So just because you may read that options expire on Saturday, don’t think you can get up Saturday morning and call your broker with exercise instructions – it’s too late. The third Friday of the expiration month is your *last day* (not the only day) to close or exercise the option. (If Friday is a holiday, the last trading day will usually be the preceding Thursday.)

Although a pizza storeowner may allow you to turn in an expired coupon, there’s no such thing with the options market. The second that option expires, it’s gone for good. There are some index options, such as options covering the S&P 500 Index that expire on the third Thursday of the expiration month. However, we will only be discussing equity options in this book, so whenever we talk about the expiration date, we will always be referring to the third Friday of the expiration month unless otherwise stated.

### American Versus European Styles



As stated before, most option contracts are simply bought and sold in the open market without a single share of stock ever changing hands. However, if you wish to physically trade shares of stock, you must exercise your option. When can you exercise your option? The answer to that depends on the *style* of option. There are two styles of options: *American* and *European*. The style of option has nothing to do with its origin as implied by the names “American” and “European.” Instead, the style simply tells us when the option may be exercised. American-style options can be exercised at *any* time through the third Friday of the expiration month. European-

## Introduction to Options

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style options, on the other hand, can *only* be exercised on the third Friday of the expiration month. You generally do not get to select which style of option you want. All equity options (that is, options on stock) are American style and can be exercised at any time. Most index options are European style. There are a few indices that offer both such as the OEX (S&P 100 Index), which is American style and the XEO (letters reversed), which is the European version of the same index.

It may sound like the American-style option has a big advantage over a European style. After all, for example, if a stock is really flying high it would be nice to exercise a call option and buy the shares at a cheaper price and immediately sell the shares to capture a profit. We're going to find out in Chapter Four that exercising a call option early for this reason is a big mistake. You will find out that most of the time you are better off just selling the call option in the open market rather than exercising it.

This book is written from the perspective of equity options, so we will assume that all options discussed are American style unless otherwise stated. We only differentiate the terms "American" and "European" so you will know what they mean if you hear them later while continuing to learn about options. The bottom line is that all equity options are American style, which means the long position can exercise them at any time during the life of the option even though it is rarely optimal to do so.



The last day to buy, sell, or exercise your options is the third Friday of the expiration month.

### Physical Versus Cash Delivery

If you exercise an equity option, you will either buy or sell the actual (physical) shares of the underlying stock. This is called *physical delivery* or *physical settlement*.

On the other hand, most index options, such as SPX (S&P 500), are *cash settlement* rather than physical delivery. In other words, if the long position exercises an index option, he receives the cash value of the option rather than taking actual delivery of all the stocks in that index. Just realize that not all options settle in physical delivery. As you continue to learn more about options you will

hear the terms “physical settlement” and “cash settlement,” and it’s important you understand what these terms mean.

### Exercise Versus Assign

We said earlier that it is the long positions who get to exercise their options. What do short positions get to do? Nothing. Remember, short positions have no rights. The short position may get a phone call from his broker stating that he has just purchased or sold shares of stock due to a call option he sold. If you are required to buy or sell shares of stock due to a short option, it is called an *assignment*.

If you get assigned on an option, your broker will notify you the next business day to inform you of the assignment. He may say something like, “I’m calling to inform you that you’ve been assigned on your short call options and have sold 100 shares for the strike price of \$50.”

The words exercise and assign should only be associated with long and short positions respectively. However, in the real world, if you are assigned on a short option, brokers may say things like “you got exercised” on an option even though it is technically incorrect. Long positions exercise. Short positions get assigned. In truth, it doesn’t really matter in practice if an incorrect phrase is used such as “you got exercised” rather than “you got assigned” as long as you understand the message. However, if these terms are used, you do need to understand the difference. Most books and literature on options carefully choose between the words “exercise” and “assign” and you need to understand the actions they are referring to.

Let’s work through some examples to be sure you understand. If you are long a call option, you have the right to exercise it and buy shares of stock. If you are short the call, you might get assigned and be required to sell shares. If you are long a put option, you have the right to exercise it and sell shares. If you are short the put option, you could get assigned and be required to buy shares. To continue further, if a long call holder uses his call to buy shares of stock he would say, “I exercised my call.” The short call holder would say, “I got assigned on my call.”

It is important to understand that once you submit exercise instructions to your broker and the shares and cash have exchanged hands it is an *irrevocable* transaction. Make sure you want to exercise before submitting instructions. Also, many firms have cutoff times after which exercise instructions cannot be changed (even though

## Introduction to Options

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the shares or cash may not have yet been exchanged). Check with your broker as to what these cutoff times are before you submit exercise instructions.

### Option Basics

You now have enough information to understand some hypothetical call and put options. These two assets – calls and puts – are the building blocks for every option strategy you will ever encounter. This is why it is crucial that you understand the rights and obligations that they convey. Most confusion with option strategies stem from not understanding (or simply forgetting) who has the right and who has the obligation.

Because options are binding contracts, they are traded in units called *contracts*. Stocks are traded in shares; options are traded in contracts. An option contract, just like a pizza coupon, will always be designated by the underlying stock it controls along with the expiration month and strike price. For example, let's assume we are looking at a Microsoft June \$30 call.

We'll soon show you where you can look up actual option quotes and symbols for options, but for now let's make sure you understand what this option represents.

Using your understanding of pizza coupons, what do you suppose the buyer of one contract is allowed to do? The buyer of this call has the right (not the obligation) to purchase 100 shares of the underlying stock – Microsoft – for \$30 per share at any time through the third Friday in June. (Remember that the expiration date for stock options is always the third Friday of the expiration month.) The buyer of this coupon is “locked in” to the \$30 price no matter how high Microsoft shares may be trading. Obviously, the higher Microsoft trades, the more valuable the call option becomes.

To understand this concept a little better, assume that you have found a piece of property valued at \$300,000 and wish to buy it. But you'd first like spend a few days researching the area before buying it. If you do, you'll run the risk of losing it to another investor. What can you do? You can go to the broker and put down some money to hold the property for you. For instance, you may pay \$500 for several days worth of time. If you decide against the property, you lose the \$500. These arrangements are done all the time in real estate and are called “options” on real estate. Assume that you pay the \$500 for five days worth of time and are now

## Options Trading 101

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locked into a binding agreement to buy the property for \$300,000 over the next five days. Now suppose that some news is spreading that the area is about to be commercially zoned and some big businesses are interested in it. Property in the area goes up dramatically overnight. But even if you decide to not buy the property, don't you think that somebody else would love to be in possession of the contract that you have giving them the right to pay \$300,000? Of course they would. And these people will start offering you large amounts of money to persuade you to sign over the contract to them. You could just sell it to them and they could sell it to others. This is exactly what most traders do with the equity options market.

Now let's go back to our option example. How much will it cost you to use (exercise) your call option? Because you are buying 100 shares of stock, the strike price must be multiplied by 100 as well. (The number "100" is called the "multiplier" of the option for this reason.) If you were to exercise this Microsoft \$30 call option, you would pay the \$30 strike \* 100 shares = \$3,000 cash. This is called the *total contract value* or the *exercise value*. In exchange for that payment, you'd receive 100 shares of Microsoft. It works just like a pizza coupon. You pay a fixed amount of cash and receive some type of underlying asset. Most brokers charge a standard stock commission to exercise your options. If you exercised this call, your broker would probably charge you his regular commission for buying 100 shares of stock. After all, the long call option is simply a means for buying regular shares of stock.

To restate a previous point, it is important to understand that if you buy call or put options, you are not required to ever buy or sell shares of stock. Further, you do not ever need the shares of stock in your account at any time. Most option contracts are opened and closed in the open market without a single share of stock changing hands. Even though you're allowed to purchase or sell stock with your options, most traders never do. Instead, they just buy and sell the contracts in the open market amongst other traders.

Now let's assume we are looking at a Microsoft June \$30 put option. Think about your auto insurance policy and try to figure out what this option allows you to do. If you buy this put option, you have the right to sell 100 shares of Microsoft for \$30 per share at any time through the third Friday in June. Because you are locking in a selling price, put options become more valuable as the stock price falls. If you exercise this put option, you are selling 100 shares of Microsoft,

## Introduction to Options

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which means you will have 100 shares of Microsoft taken from your account and delivered to someone else. In exchange, you will receive the \$30 strike \* 100 shares = \$3,000 cash. If you exercise this put, your broker will probably charge the regular stock commission for selling 100 shares of stock since the put option is simply a means for selling regular shares of stock.

What if you only wish to buy or sell fewer than 100 shares of stock? You can do that but in a roundabout way. Using the call example above, let's say you only wanted to buy 60 shares of Microsoft for \$30. You would still exercise the call option for 100 shares and then immediately submit an order to sell 40 shares (which would carry a separate commission). Each contract is good for 100 shares and you must buy and sell in that amount. But there's nothing stopping you from immediately entering another order to customize those amounts to suit your needs. Likewise, if you exercised a put option but only wanted to sell 60 shares of stock, you would have to exercise the put and sell 100 shares and then immediately place an order to buy 40 shares.

### Options Are Standardized Contracts

The reason that options are inflexible as to the number of shares is because options are standardized contracts. A standardized contract means there is a uniform process that determines the terms, which are designed to meet the needs of most traders and investors. By using standardized contracts, we lose some flexibility in terms (such as the number of shares, strike prices, and expiration dates) but increase the ease, speed, and security in which we can create the contracts.

In fact, if the exchanges find there is not sufficient demand for options on a stock, they will not even list those options. Most of the well-known companies have options available. If a stock has listed options, it is an *optionable* stock. Microsoft and Intel, for example, are optionable. There are currently more than 2,300 optionable stocks, so the list is quite large.

Another limitation of standardized contracts is the fixed strike price increments. If the stock price is below \$50, you will find options available in \$2.50 increments. If the stock price is between \$50 and \$200, options will be in \$5 increments. And if the stock price is over \$200, you will find option strikes in \$10 increments. Notice that the strike price increments have nothing to do with the *current* price of the stock. The increments are based on the stock's price at the

## Options Trading 101

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time the options start trading. If a stock's price has been greatly fluctuating, you might find different increments for different months. For instance, you may find \$2.50 increments for the first two expiration months and \$5 increments in later expiration months. This just tells you that the stock's price was above \$25 when the later months started trading.

By having standardized strikes, we can quickly bring new contracts to market that meet the needs of the vast majority of people. Imagine how overwhelming the task would be if the exchanges tried to meet everybody's needs by creating strike prices at every possible price such as \$30, \$30.01, \$30.02, etc. and then matched those with every possible expiration date such as June 1, June 2, June 3, etc. It would be a near impossibility. To solve these problems, the exchanges created standardized contracts so that we can have some flexibility while still keeping the list manageable.

What if you really want a customized contract? Is it possible to get one? Technically, there is nothing illegal about two people having a contract drawn up by an attorney that specifies the terms on which they agree to buy and sell stock. You could therefore have an attorney write a contract for you and another trader, thus creating your own call or put option. A contract drawn in this manner is completely flexible -- but it is also very time consuming and costly. In addition, even though you may have a legally binding contract, it is possible that the seller decides to not fulfill his obligation if the buyer wishes to exercise his option. If that happens, now you've got your hands tied up in court trying to get the seller to conform to the terms of the contract. In other words, customized contracts are subject to *performance risk*. That is, will the seller perform his part of the agreement if the buyer decides to exercise?

Standardized options solve the performance risk problem too since the OCC acts as the buyer to every seller and the seller to every buyer. If you exercise an option, the OCC uses a random process to decide who will be assigned. When you enter an options contract, you do not know who is on the other side of the trade. Nobody knows. It is strictly the person who ends up with the random assignment. Standardization increases confidence and influences the progress toward a smoothly running, liquid market.

Besides having an attorney draw up a contract, there is another way to get flexible contracts. You can buy FLEX contracts through the *Chicago Board Options*

## Introduction to Options

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*Exchange* (CBOE) that are totally customizable, but they also require an extremely large contract size – usually more than one million dollars. Because FLEX options are traded through the OCC they are not exposed to performance risk despite their large contract sizes. Because of the size requirements though, FLEX options are mostly used by institutions such as banks, mutual funds, and pension funds. The standardized market is the solution for the rest of us.

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### Key Concepts

1. Options are derivative assets. Their prices are derived from the price of the underlying stock.
2. Your “lock in” price is called the “strike price” or the “exercise price.”
3. If you decide to use your option, you must submit exercise instructions.
4. You are not ever required to buy or sell stock if you are trading options.
5. Your last trading day for options is the third Friday of the expiration month.
6. Options trade in units called “contracts.”
7. The exercise price multiplied by the multiplier (usually 100) equals the total contract value, or exercise value.
8. Options are standardized. You can only get them in a limited number of “flavors.”

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### Understanding a Real Call Option

Now that you know how call and put options work, let’s take a look at some real call and put options. Let’s pull up some quotes and see if we can make some sense of what we’re looking at.

You can obtain option quotes for any optionable stock by going to [www.cboe.com](http://www.cboe.com). That’s the homepage for the Chicago Board Options Exchange (CBOE), which is one of the largest option exchanges in the world. Bear in mind that the options market is open from 9:30am to 4:02pm ET (it is open until 4:15pm ET for index options). If you are pulling up quotes after 4:02pm, you’re looking at closing

## Options Trading 101

prices rather than live quotes. Also, options go through what is called an *opening rotation* every morning. This is simply an open outcry system that establishes option prices based on the current stock price openings. For this reason, you may not see live option quotes until 9:35 or 9:40 even though the options market is technically open at 9:30.

If you click on “Quotes” and then “Delayed Quotes” you will find a box where you can type your stock ticker symbol. If you are looking for options on eBay, for example, just type the ticker symbol “EBAY” and hit enter. At this time, the shortest-term options on eBay were July '05 (26 days until expiration) and the longest term was January '08 (943 days to expiration). The lowest strike is \$22.50 and the highest is \$80. So even though option contracts are standardized, there are many to choose from. Table 1-1 shows some of the shorter-term options available at the time of this writing:

Table 1-1: EBAY Option Quotes

EBAY							37.11 -0.94						
Jun 20, 2005 @ 14:43 ET (Data 15 Minutes Delayed)							Bid 37.10 Ask 37.11 Size 32x25 Vol 17121523						
Calls	Last Sale	Net	Bid	Ask	Vol	Open Int	Puts	Last Sale	Net	Bid	Ask	Vol	Open Int
<b>05 Jul 32.50 (XBA GZ-E)</b>	4.40	-1.20	4.70	4.90	5	7319	<b>05 Jul 32.50 (XBA SZ-E)</b>	0.15	--	0.10	0.20	23	23943
<b>05 Jul 35.00 (XBA GG-E)</b>	2.50	-0.90	2.60	2.70	271	13510	<b>05 Jul 35.00 (XBA SG-E)</b>	0.45	+0.10	0.45	0.50	1811	24275
<b>05 Jul 37.50 (XBA GU-E)</b>	1.00	-0.55	1.00	1.05	909	21930	<b>05 Jul 37.50 (XBA SU-E)</b>	1.40	+0.45	1.35	1.40	633	18877
<b>05 Jul 40.00 (XBA GH-E)</b>	0.30	-0.20	0.30	0.35	613	34574	<b>05 Jul 40.00 (XBA SH-E)</b>	3.60	+1.15	3.10	3.20	206	13113
<b>05 Aug 32.50 (XBA HZ-E)</b>	5.00	--	5.30	5.50	100	0	<b>05 Aug 32.50 (XBA TZ-E)</b>	0.65	--	0.55	0.65	30	0
<b>05 Aug 35.00 (XBA HG-E)</b>	0	pc	3.40	3.60	0	0	<b>05 Aug 35.00 (XBA TG-E)</b>	1.25	-0.10	1.15	1.25	191	0
<b>05 Aug 37.50 (XBA HU-E)</b>	1.85	+0.10	2.00	2.10	82	0	<b>05 Aug 37.50 (XBA TU-E)</b>	2.45	-0.05	2.20	2.30	64	0
<b>05 Aug 40.00 (XBA HH-E)</b>	0.95	-0.10	1.00	1.10	64	0	<b>05 Aug 40.00 (XBA TH-E)</b>	0	pc	3.70	3.90	0	0

Before we continue, we need to introduce some more terminology that has been deliberately withheld until now for the fact that it will be easier to understand at this point. There are three main classifications for options. First, there are two **types** of options: calls and puts. Second, all options of the same type and same underlying represent a **class** of options. Therefore, all eBay calls or all eBay puts (regardless of expiration) make up a class. Third, all options of the same class, strike price, and expiration date make up a **series**. For instance, all *July \$32.50 calls* form a **series**.

## Introduction to Options

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At the time these quotes were taken, eBay stock was trading for \$37.11, which you can see in the upper right corner of Table 1-1. The first column is labeled “calls” and several columns to the right you will find one labeled “puts.” The first call option on the list is **05 Jul 32.50**. The “05 Jul” tells us that the contract expires in July ‘05 and the “32.50” designates that it is a \$32.50 strike price. The last trading day for this option will be the third Friday in July ‘05. All you have to do is look at a calendar and count the third Friday for July ‘05 and that is the last day you can trade the option (which happens to be July 15 for this particular year). Remember, you can buy, sell, or exercise this option on *any* day, but the last day to do so is July 15. All 05 July options will expire on the same date regardless of the strike price or whether they are calls or puts.

The “**XBAGZ-E**” notation is the symbol for that option. Just as every stock has a unique trading symbol, each option carries a unique symbol. However, you can forget about the “dash E,” as the letter E is a unique identifier for the CBOE, which just tells us these quotes are coming from that exchange. If you wanted to buy or sell this option online, you’d enter the symbol “XBAGZ.” Your broker, however, may require you to follow this symbol with “.O” to show that it is an option (for example, XBAGZ.O). Your broker will make it very clear if he has these requirements, but the actual symbol (XBAGZ in this example) will always remain the same regardless of which brokerage firm you use.



Your brokerage firm may list option symbols as “OPRA” codes. The committee named for consolidating all of the option quotes and reporting them to the various services is called the Options Price Reporting Authority or “OPRA.” An OPRA code is the same thing as the option symbol. You can read more about OPRA at [www.OpraData.com](http://www.OpraData.com).

The \$32.50 strike means that the owner of this “coupon” has the right, not the obligation, to buy 100 shares of eBay for \$32.50 through the third Friday of Jul ‘05. No matter how high a price eBay may be trading, the owner of this call option is locked into a \$32.50 purchase price. Now this seems like a pretty good deal since the stock is trading much higher at \$37.11. It appears that if you got the \$32.50 call, you could make an immediate profit of  $\$37.11 - \$32.50 = \$4.31$ . In other words, it appears that if we could get our hands on this coupon, we could buy the stock for \$32.50 and immediately sell it for the going price of \$37.11 thus making an immediate profit of \$4.31. However, you must remember that call

## Options Trading 101

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options, unlike pizza coupons, are not free. It will cost us some money to get our hands on it.

How much will it cost to buy this coupon? We can find out by looking at the “ask” column, which shows how much you will have to pay to buy the option. It shows a price of \$4.90 to buy this call. This means the apparently free \$4.31 is no longer free since you’re paying \$4.90 for \$4.31 worth of immediate benefit. In fact, you will find that you must always pay for any immediate advantage that any call or put option gives you. The main point is that you cannot use options to collect “free money” in the market. When traders are first introduced to options, they often think they can buy a call option that gives them an advantageous price and then immediately exercise the call for a free profit. They overlook the fact that the price of the option will more than reflect that benefit. Why would someone pay \$4.90 for \$4.31 worth of immediate benefit? Because there is time remaining on the option. It is certainly possible that the option will, at some point in time, have more than \$4.31 worth of benefit, and traders are willing to pay for that time.

The \$4.90 price is also called the *premium*. The premium really represents the price per share. Since each contract controls 100 shares of stock, the total cost of this option will be  $\$4.90 * 100 = \$490$  plus commission to buy one contract. So if you spend \$490, you can control 100 shares of eBay through the expiration date of the contract. That’s certainly a lot less than the \$3,711 it would cost to buy 100 shares of stock. If you buy two contracts, you will control 200 shares and that will cost \$980 plus commissions, etc. Remember, we said that all options control 100 shares when they are first listed but it is possible for them to control more shares, which is usually due to a stock split. If that happens, it is possible for the contract size to change, which we will expand on more in Chapter Four. The main point to understand is that you always multiply the option premium by the number of shares that the contract controls in order to find the total price of the option. In most cases, you will multiply by 100.

### Bid and Ask Prices



Let’s take a brief detour here to learn more about what the bid and ask represent since they can be confusing to new traders. Notice that the \$32.50 call shows a *bid* price of \$4.70 and an *ask* price of \$4.90. You have to remember that the options market, just like the stock market, is a live auction. There are traders continuously placing bids to buy and

## Introduction to Options

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offers to sell. The bid price is the highest price that someone is willing to pay at that moment. The asking price is the lowest price at which someone will sell at that moment. If these terms are confusing, think of the terms you use when buying or selling a home. If you wish to buy a home, you submit a bid. Buyers place bids. If you were selling your home, you'd say I am "asking" such-and such a price for it. Sellers create asking prices. Sometimes you will hear the word "offer" instead of "ask" but they mean the same thing. If the bid represents the highest price someone is willing to pay that means you can receive that price if you are selling your option. You are selling to a buyer and the trade can get executed. Notice that you cannot sell at the \$4.90 asking price because that is a seller too and you cannot execute a trade by matching a seller with a seller.

Likewise, if you are buying this option, you should refer to the asking price to see how much it will cost you. Since the asking price shows the lowest price that someone will sell, we know you can buy the option for that price. In this case, you are buying from a seller and the trade can get executed. This is important to remember since the price you pay or receive depends on the bid and ask. This trade may appear to be a good deal if you can sell for \$4.90 but you will be disappointed if you find that you only receive \$4.70. You need to be aware of which price applies to your intended action. *In summary, if you are selling then you should reference the bid price. If you are buying, you should look at the asking price.* This is especially critical for options traders since the volume on options is not as high as it is for the stock and, consequently, options will have larger spreads between the bid and ask. For example, in the upper right corner of Table 1-1, you can see that the stock is bidding \$37.10 and asking \$37.11, which represents a one-cent spread between the buyers and sellers. However, the \$32.50 call option is bidding \$4.70 and asking \$4.90, which is a 20-cent spread. The bigger that spread, the more critical it is to understand what these numbers mean, otherwise you could be in for an unpleasant surprise when trading. We'll learn more about the bid and ask in Chapter Four when we examine the Limit Order Display Rule and how you can use it to your advantage to lessen the effect of the spread.



The "bid" price represents the highest price that a BUYER is willing to pay. It is consequently the price at which you can sell the option.

The "ask" price represents the lowest price that a SELLER is willing to receive. It is consequently the price at which you can buy the option.

## Options Trading 101

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Okay, let's try the next call on the list in Table 1-1, which is the **05 Jul 35** call (notice that the strikes are in \$2.50 increments since eBay is below \$50, which is in agreement with what we stated earlier). If you buy this call option, you have the right, not the obligation, to buy 100 shares of eBay for \$35 per share through the third Friday in July '05. Since eBay is trading for \$37.11, we know that anybody holding this option has an immediate advantage of  $\$37.11 - \$35 = \$2.11$  by buying this call and we now know that this advantage must be reflected in the price. You can verify that the asking price is \$2.70, which shows the apparently free \$2.11 benefit is not free. Again, the reason traders will pay more than the \$2.11 benefit is because there is time remaining on the option and it certainly could end up with more value. If you want to buy this contract, it will cost you  $\$2.70 * 100 \text{ shares} = \$270$  per contract + commissions. If you buy two contracts, you will control 200 shares and that will cost \$540 and so on.

While we're talking about the prices in Table 1-1, let's explain what the rest of the columns mean. The **LAST SALE** column records the price of the last trade of the option. Option traders rarely look at this, since that price could have occurred during the last minute but it also could have been last week. We don't know when that trade took place. We just know that was the price when it last traded. For stock traders, the last sale will generally be very close to the bid and ask of the stock, because optionable stocks generally have high volume – but that is not necessarily true for their options. In Table 1-1, you can see that the last trade on eBay was \$37.11 with the bid at \$37.10 and the asking price at \$37.11. The last sale for the stock is very close to the current bid and ask, which will usually be the case. But notice that the last trade for the \$32.50 call was \$4.40 with the bid and ask at \$4.70 to \$4.90. This shows that the last trade is somewhat stale; that's why option traders generally do not look at the last trade. If you were buying this option, the last sale would lead you to believe that it would cost \$4.40 when it would really cost \$4.90. If you were selling the option, the last sale may make you decide against it since it appears you would only receive \$4.40 when, in actuality, you get \$4.70.

The **NET** column shows the difference, or the “net change,” between the last trade and the last closing price just as it does for stocks. For the July \$32.50 call, the last trade was \$4.40 and that price was down \$1.20 from its previous price, which means the previous trade was  $\$4.40 + \$1.20 = \$5.60$ . If this option traded at \$5.60 and the next trade was at \$4.40 then that represents a \$1.20 drop in price, which is

## Introduction to Options

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what the **NET** column shows. Again, the reason for the apparent big drop in price is because there was a big time delay between those two trades.

The **VOL** column shows us the volume, which is simply the number of contracts traded that day. For the stock market, volume refers to the number of shares traded; for the options market, it refers to the number of contracts but the idea is the same.

The **OPEN INT** column shows how many contracts are currently in existence, which is called the “open interest.” We’ll find out more about open interest in Chapter Four.

A brief explanation, however, is worth mentioning here. When you buy or sell a contract, you must specify whether you are entering or exiting the contract. If you are entering into the contract (or increasing the size of an existing position) then you are “opening” the contract. However, if you are exiting the contract (or decreasing the size of an existing position) then you are “closing” the contract.

Most brokerage firms require that you specify whether you are opening or closing the position. For instance, if you wish to buy 10 Microsoft July \$30 calls you would enter the order as “buy to open” 10 Microsoft July \$30 calls. You would not say “buy” 10 Microsoft July \$30 calls. The reason is that the word “buy” alone doesn’t tell the broker if you are buying the calls to own them (opening transaction) or if you are buying the calls to close a short position (closing transaction). Using the words “to open” or “to close” clarifies your intentions.

Some of the newer firms do not require the use of the words “opening” or “closing.” Instead, they account for it based on the existing positions in your account. For instance, if you have no Microsoft July \$30 calls then the above order is recognized as an opening transaction. On the other hand, if you were short 10 Microsoft July \$30 calls then the order is recognized as a closing transaction.

Every time the buyer and seller are entering an “opening” order it adds to the open interest. For instance, if you are buying 10 contracts to open and the seller is selling 10 contracts to open, then open interest is increased by 10.

If the buyer and seller were, instead, both entering “closing” transactions, then open interest would decrease by 10 contracts. Finally, if one is “opening” while the other is “closing,” then that order has no effect on the open interest.

Open interest provides a measure of how many contracts are currently in existence and therefore provides a measure of liquidity. That's what the open interest column shows.

### Understanding a Real Put Option

Now that we've looked at a couple of call options, let's take a look at some real put options. In Table 1-1, what does the **05 Jul 32.50** put option represent? If you buy this put, you have the right to sell 100 shares of eBay for \$32.50 per share through the third Friday of July '05. For that right, you would have to pay  $0.20 * 100 = \$20$  plus commissions. No matter how low a price eBay might be trading, you are guaranteed to get \$32.50 if you exercise this put option to sell your shares. Remember, you do not need to own the shares of stock to buy a put. By purchasing this put, you have the right to sell shares for \$32.50 and somebody else will be very willing to buy this from you if eBay falls below \$32.50. By purchasing the put, you're banking on eBay's price falling. If you think the price of eBay will fall, you can buy the put and then sell it to someone else, thus capturing a profit without ever having the shares to sell. Notice that with this option, there is no immediate benefit in owning the \$32.50 put. If you owned shares of eBay and wanted to sell, you'd just sell the shares in the open market for \$37.11. Once again, the reason there is any value to this \$32.50 put at all is because there is time remaining and it may end up with a lot more value if eBay's price falls. Traders are willing to pay for that time.

Let's try another one on the list, the July \$37.50 put. If you buy this put, you have the right to sell 100 shares of eBay for \$37.50 per share through the third Friday of July '05. Now this put does appear to have an immediate value since we could sell the stock for a higher price than it is currently trading. It appears that if we buy this put, we could buy the shares for \$37.11 and immediately use the put option and collect \$37.50 for an immediate guaranteed profit of 39 cents. As with our call option examples, any immediate benefit must be paid for, and we can verify that by observing the 50-cent asking price. In other words, you're paying 50 cents for that 39-cent benefit. The market is willing to pay more than the immediate benefit since there is time remaining on the option. You cannot use options, whether calls or puts, to collect "free money."

## Introduction to Options

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### Key Concepts

- 1) The price of an option is called the premium.
- 2) The “ask” price tells us how much we have to pay for an option. The “bid” price tells us how much we can sell it for.
- 3) To find the total price for one option contract, multiply the bid or ask by 100.
- 4) The last day to trade an option is the third Friday of the expiration month.

### Intrinsic Values and Time Values

In the previous section, we found out that some options have an “immediate value” or “immediate benefit” at the time they are purchased while others do not. It’s time now to introduce some more terminology that will help you understand why.

We discovered that an option’s price must reflect any immediate value in holding it. For instance, we found that the July \$35 call could give a trader an immediate benefit of \$2.11 since the stock is trading for \$37.11. If the stock is trading for \$37.11 and you have a call that gives you the right to buy the stock for \$35, you’re better off with the call by  $\$37.11 - \$35 = \$2.11$ . That \$2.11 worth of immediate benefit must be reflected in the price, and we see that it is since that call is priced higher at \$2.70. In option lingo, we’d say that the \$35 call has \$2.11 worth of *intrinsic value*. It will really help if you learn to substitute the words “immediate benefit” or “immediate value” for intrinsic value. If the stock is trading for \$37.11, we know the \$35 call must be worth at least \$2.11 in the open market. In other words, options must be worth at least their intrinsic value.

If there is any value in the option over and above this amount, it is called *time value* or *time premium*. (Some texts will also refer to this as *extrinsic value*.) The time value is due to the fact that there is still time remaining on the option. Since the July \$35 call was trading for \$2.70 and the intrinsic value is \$2.11 then the time value must be  $\$2.70 - \$2.11 = 59$  cents.

## Options Trading 101

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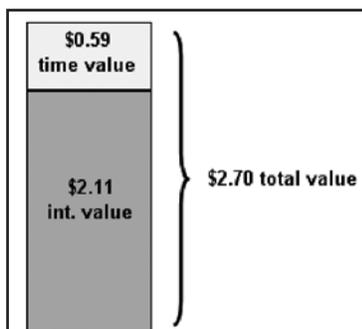
Any option's price can be broken down into the two components of *intrinsic values* and *time values*. The following formula will help:

Formula 1-2:

$$\text{Total Value (Premium)} = \text{Intrinsic Value} + \text{Time Value}$$

Using the July \$35 call example, we know that the intrinsic value is \$2.11 and the time value is 59 cents, so the total call value must be \$2.11 intrinsic value + \$0.59 time value = \$2.70 total value. Figure 1-3 may help you to visualize the breakdown of time and intrinsic value:

Figure 1-3: Breakdown of Time and Intrinsic Values



If there is no intrinsic value then the option's price is comprised totally of time value. For example, in Table 1-1, the July \$37.50 is trading for \$1.05. However, the stock is only \$37.11. If you buy the \$37.50 call, you're buying a coupon that gives you the right to buy the stock for a higher price than it is currently trading. On the surface, it may seem that the \$37.50 call has no value. But the real way to say it is that it has no intrinsic value; the \$37.50 call has no *immediate* value. There may be value in the future, but there's no immediate value at this time. The \$1.05 premium on this call is made up of pure time premium. The only reason value exists on this call is because time remains.

Using Formula 1-2 for the July \$37.50 call we have \$0 intrinsic value and \$1.05 time value, so the total value is \$0 intrinsic value + \$1.05 time value = \$1.05 total value.

If you like mathematical formulas, you can find the intrinsic value of a call by taking the stock price minus the strike price (exercise price). If that number is positive, there is intrinsic value on the call option.

## Introduction to Options

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### Intrinsic Value Formula for Calls:

Stock price - Exercise price = Intrinsic Value (assuming you get a positive number).

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For example, the \$35 call must have intrinsic value since  $\$37.11 - \$35 = \$2.11$ . The \$37.50 call, on the other hand, has  $\$37.11 - \$37.50 = -39$  cents. Since this number is negative, there is no intrinsic value on this call.

For puts, we use the same reasoning but in the opposite direction. In Table 1-1, the July \$40 puts are trading for \$3.20. There is obviously an immediate benefit in holding the \$40 put since we could sell our stock for \$40 rather than the market price of \$37.11. The amount of that benefit is  $\$40 - \$37.11 = \$2.89$ . The intrinsic value is therefore \$2.89. Because the put is trading for \$3.20, the remaining value must be time value. The time value is  $\$3.20 - \$2.89 = 31$  cents. Once again, using Formula 1-2 we see that the \$2.89 intrinsic value + \$0.31 time value = \$3.20 total value.

If you wish to use mathematical formulas to find intrinsic value for puts, we can just reverse the call formula (remember, puts are like calls but they work in the opposite direction). For put options, if the exercise price minus the stock price is positive then there is intrinsic value. For example, the July \$40 put has intrinsic value since \$40 exercise price - \$37.11 stock price = \$2.89 intrinsic value. We know this is the intrinsic value since the result is a positive number. The July \$35 put, on the other hand, has no intrinsic value since \$35 exercise price - \$37.11 stock price = -\$2.11 (negative number).

## Options Trading 101

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### **Intrinsic Value Formula for Puts:**

Exercise price – Stock Price = Intrinsic Value (assuming you get a positive number).

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We can rearrange Formula 1-2 to come up with another useful formula for finding time value: Premium – Intrinsic Value = Time Value. We can abbreviate this formula as  $P - I = T$ , which looks like the word “pits.” Just remember that option formulas are the “pits” and you should have no trouble finding time values. What is the time value for the July \$35 call? The premium is \$2.70 and the intrinsic value is \$2.11 so the time value is  $\$2.70 - \$2.11 = 59$  cents.

### **Time Value for Calls and Puts:**

Premium - Intrinsic Value = Time Value.

Intrinsic value is the key value to solve. If you can find intrinsic value, you can find time value. We can't emphasize enough the importance of practicing by using the words “immediate benefit” or “immediate advantage” to determine if an option has intrinsic value. Formulas are nice if you are programming a computer but they do not allow you to understand why the formula works. Understanding the concepts is crucial to successful options trading. Use the formulas to check your answers.

Let's revisit the thought process again for finding intrinsic value. For example, if someone asks you if the July \$35 call in Table 1-1 has intrinsic value, you should ask yourself if there is an “immediate advantage” in being able to buy stock with the call for \$35 when the stock is trading for \$37.11. The answer is obviously yes. That means the \$35 call has intrinsic value. How much intrinsic value? We just need to figure out the size of that advantage. If the stock is \$37.11 and you can buy it for \$35, there is  $\$37.11 - \$35 = \$2.11$  worth of advantage in the \$35 call. The intrinsic value must be \$2.11. Any remaining value in the option's price is due to time value. Because the option is trading for \$2.70, there must be  $\$2.70 - \$2.11 = 59$  cents worth of time value.

What about the \$40 put? Again, we know there is an “immediate advantage” in being able to sell your stock for \$40 rather than the current price of \$37.11, so this put has intrinsic value. How much intrinsic value? Again, we just need to find out

## Introduction to Options

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how big the advantage is. If the owner of that put can sell stock for \$40 when the stock is trading for \$37.11, there must be  $\$40 - \$37.11 = \$2.89$  worth of intrinsic value. Any remaining value in the option's price is due to time value. Because the option is trading for \$3.20, there must be  $\$3.20 - \$2.89 = 31$  cents worth of time value. Keep practicing these steps and intrinsic and time values will become second nature to you.

### Moneyiness

We just learned the difference between time and intrinsic values, and that allows us to understand some more option terminology. Options are generally classified by traders as *in-the-money*, *out-of-the-money*, or *at-the-money*, which are sometimes referred to as the “moneyiness” of an option. An option with intrinsic value is in-the-money, while an option with no intrinsic value is out-of-the-money. An option that is neither in nor out of the money is at-the-money.

The phrase “in-the-money” is generally used to imply that something is profitable. If someone says their new business is in-the-money, it means they are making money, and that's really what this term is implying with options. For example, in Table 1-1, the \$32.50 and \$35 calls are in-the-money since both have intrinsic value. The owners of these calls are able to buy the stock for less than it is currently trading and therefore have some real value in holding the option. The \$40 call is out-of-the-money since there is no immediate benefit in holding it; there is no intrinsic value. Technically speaking, an at-the-money option has a strike that exactly matches the price of the stock. But since it is rare that the stock price will exactly match a particular strike, we usually label the at-the-money strike as the one that is closest to the current stock price. In Table 1-1, we'd say that the \$37.50 strikes are at-the-money calls (even though they are technically slightly out-of-the-money).

If an option is very much in-the-money (usually by a couple of strike prices or more) the option is considered *deep-in-the-money*. If it is several strikes out-of-the-money it is considered to be *deep-out-of-the-money*.

For put options, the same definitions apply; all strikes with intrinsic value are in-the-money. For puts, this means that all strikes higher than the stock's price are in-the-money. In Table 1-1, the \$40 puts are in-the-money since they have intrinsic value. The \$35 puts are out-of-the-money since they have no intrinsic value. The

## Options Trading 101

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at-the-money strike will be the same for calls and puts, so the \$37.50 puts would be considered the at-the-money strikes (even though they are technically slightly in-the-money).

The terms in-the-money, out-of-the-money, and at-the-money are used just for description purposes; it just makes it easier for option traders to describe types of options and strategies. For example, rather than tell someone that you bought some call options whose strike price is lower than the current value of the stock, it's easier to say you bought some in-the-money calls.

Table 1-4 describes the moneyness for calls and puts:

Table 1-4

CALL OPTIONS	
Moneyness	Relationship to Stock
In-the-money	Stock price > Strike price
At-the-money	Stock price = Strike price
Out-of-the-money	Stock price < Strike price

PUT OPTIONS	
Moneyness	Relationship to Stock
In-the-money	Stock price < Strike price
At-the-money	Stock price = Strike price
Out-of-the-money	Stock price > Strike price

Most option exchanges, such as the CBOE, always provide at least one in-the-money and one out-of-the-money option for each month. This means that as the stock moves to new highs (or lows) then new strikes will be added to each expiration month.

The moneyness of an option affects the amount of time premium present. In general, in-the-money and out-of-the-money options will have the smallest time premiums. At-the-money options have the greatest amount of time premium. In other words, at-the-money options contain the highest amount of time value, and that value shrinks as we move toward the in-the-money or the out-of-the-money strikes.

## Introduction to Options



The at-the-money option has the highest time value. Time value shrinks as we move in-the-money or out-of-the-money.

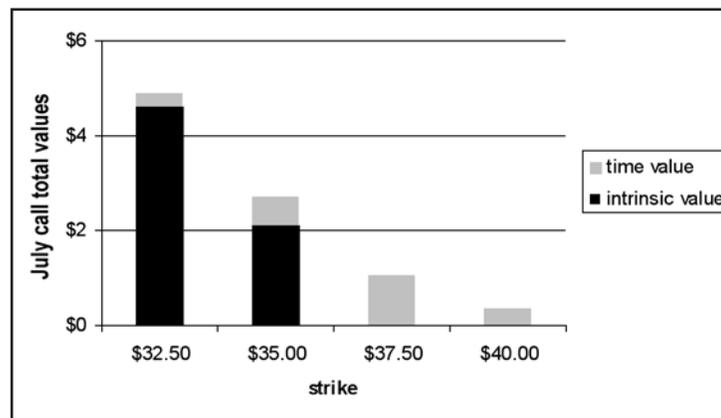
For example, Table 1-5 shows the time values for the July calls and puts in Table 1-1:

Table 1-5

Strikes	Call Time Value	Put Time Value
<b>\$32.50</b>	0.29	0.20
<b>\$35</b>	0.59	0.50
<b>\$37.50</b>	<b>1.05</b>	<b>1.01</b>
<b>\$40</b>	0.35	0.31

Notice that the time values are relatively small for the in-the-money strikes (\$32.50 call, \$35 call, \$40 put). The time values are also relatively small for out-of-the-money strikes (\$40 call, \$32.50 put, \$35 put). It is the at-the-money strike (\$37.50) that has the highest time value. Figure 1-6 shows the intrinsic and time values for only the call options in Table 1-5. You can see that the time value is very small for the \$32.50 call because it is so far in-the-money. As we increase the strike price, the time premium gradually increases as well until we're only left with pure time premium.

Figure 1-6



### Parity

An option that is trading for purely intrinsic value (i.e., no time value) is trading at *parity*. For instance, assume that the underlying stock is trading for \$46. If the \$40 call is trading for \$6 then it is comprised totally of intrinsic value and is therefore trading at parity. Options generally only trade at parity when there is little time remaining (usually a matter of hours).

### Wasting Assets

We've learned that if you want a call or put option you must pay money for it. We also know that options expire at some time and that leads to an interesting question. Do options lose all of their value at expiration? After all, if the option is no longer good, how can it have any value?

While it is true that an option loses some of its value with each passing day, there is often a big misconception about how much of that premium is lost at expiration. There are traders who will tell you that *all* options become worthless at expiration, and that is simply not true. In an earlier section "Intrinsic Values and Time Values," we said that all options must be worth at least their intrinsic value – and expiration time is no different. At expiration, all options lose only their *time value* but not their intrinsic value, which is a process known as *time decay*. It is only the time value portion of their price that slowly bleeds away with time. The intrinsic value remains intact. This is one of the reasons why it is so important to understand how to decompose an option into its intrinsic and time values. Certain strategies rely on the use of intrinsic values, while others make use of the time values. If you want to trade, hedge, or invest with options, you need to know how much of each value is present at each strike price.

To make sure you understand this concept, let's look at the August \$35 call in Table 1-1, which is trading for \$3.60. We know there is  $\$37.11 - \$35 = \$2.11$  worth of intrinsic value and that means that the remaining value, or  $\$3.60 - \$2.11 = 1.49$  worth of time value. If you were to buy this call and eBay closed at the same price of \$37.11 at expiration, the \$35 call would still be worth the intrinsic value of \$2.11. It would not be worth zero. The only amount you would lose is the \$1.49 worth of time premium. Remember, traders are paying the additional \$1.49 over and above the immediate value because there is time remaining. Once time is gone (option is expired), then there can be no time value on the option, but the intrinsic value will remain. In Figure 1-6, the intrinsic value is bold and the time

## Introduction to Options

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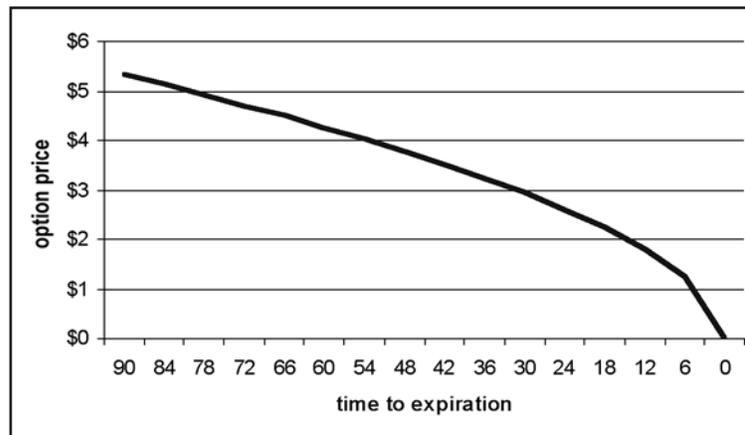
value is shaded. It is only the shaded portion that erodes with time. (Bear in mind this doesn't mean that you cannot lose the intrinsic value. However, that value can be lost due to adverse stock movement only and not the passage of time.)

Because options lose some value with each passing day, they are called *wasting assets*. There are some traders who reject the use of options since part of the option's price deteriorates simply by the passage of time, but that is a thoughtless reason. The car you drive loses value over time. The same is true for the fruits and vegetables you buy. What about the computer you use? It doesn't make sense to say that it's not worthwhile to invest in assets whose value depreciates over time. You just have to be careful in the way you use them. Nearly all assets deteriorate over time, so don't back away from options just because a portion of their value depreciates over time. Even the expensive factories that General Motors, Dell Computer, and Intel have built all lose value with each passing day, but the CEOs will tell you they have been very productive assets.

### Time Decay

Time decay does not occur in a straight line over time. In other words, an at-the-money option with 30 days to expiration does not lose 1/30 of its value each day. Instead, it loses value slowly at first, which then progressively accelerates more and more each day. This is called *exponential decay*. Figure 1-7 shows the price of a 90-day option where we assume that nothing changes except the passage of time. You can see the rapid acceleration of decay as time gets near expiration – especially in the last thirty days.

Figure 1-7



Some texts will show this chart in the reverse order with the numbers on the horizontal axis increasing from 0 to 90, which is probably more mathematically correct since the numbers are ascending as we move left to right. However, it makes it awkward to read since you must make time move from right to left as we approach expiration. It's usually easier for people to visualize time moving forward by moving from left to right. It's a matter of preference as to which type of chart you use. Just realize that as you continue reading about options that you may encounter time decay charts that appear backwards but it's just due to two different styles of presenting the same concept. The important point is that you understand that time decay is not linear. Because of this, it is usually to your advantage to buy longer periods of time and sell shorter periods of time. We will revisit this concept later but just realize for now that an option's value does not decay in a straight line.

Before we leave this section, you might be wondering if there are any similarities between stocks and options. You might be surprised that options are similar to stock in many ways:

### **How Are Options Similar to Stocks?**

- Options are securities.
- Options trade on national SEC (Securities Exchange Commission)-regulated exchanges.
- Option orders are transacted through market makers and retail participants with bids to buy and offers to sell and can be traded like any other security.

### **How Do Options Differ from Stocks?**

- Options have an expiration date, whereas common stocks can be held forever (unless the company goes bankrupt). If an option is not exercised on or before expiration, it no longer exists and expires worthless.
- Options exist only as "book entry," which means they are held electronically. There are no certificates for options like there are for stocks.
- There is no limit to the number of options that can be traded on an underlying stock. Common stocks have a fixed number of shares outstanding.

## Introduction to Options

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- Options do not confer voting rights or dividends. They are strictly contracts to buy or sell the underlying stock or index. If you want a dividend or wish to vote the proxy, you need to exercise the call option.



### Key Concepts

- 1) The intrinsic value of an option represents the “immediate benefit” in using the option.
- 2) Any value in the option above the intrinsic value is the time value.
- 3) In-the-money options have intrinsic value. Out-of-the-money options have no intrinsic value.
- 4) At-the-money options carry the highest time value.
- 5) You only lose your time value at option expiration. Any intrinsic value must remain.

### Chapter One Questions

- 1) **Call options give buyers the:**
  - a) Obligation to buy stock
  - b) Right to buy stock
  - c) Obligation to sell stock
  - d) Right to sell stock
- 2) **Put options give buyers the:**
  - a) Obligation to buy stock
  - b) Right to buy stock
  - c) Obligation to sell stock
  - d) Right to sell stock

## Options Trading 101

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- 3) **Option sellers:**
- a) Have rights
  - b) Receive premiums
  - c) Have obligations
  - d) Both b and c
- 4) **One option contract generally controls how many shares of stock?**
- a) 25
  - b) 50
  - c) 75
  - d) 100
- 5) **You bought an Intel \$25 call. The “\$25” figure is called the:**
- a) Contract value
  - b) Moneyness
  - c) Strike price or exercise price
  - d) Intrinsic value
- 6) **The intrinsic value of an option represents the:**
- a) Time value
  - b) Immediate benefit
  - c) Contract value
  - d) Strike price
- 7) **You are long an ABC \$40 call. How much will it cost to exercise the call?**
- a) \$40
  - b) \$400
  - c) \$4,000
  - d) \$40,000
- 8) **If you are “long” options:**
- a) You are not required to ever buy or sell the stock
  - b) You are required to buy or sell the stock if assigned
  - c) You are obligated to buy stock at some time
  - d) You receive premiums

## Introduction to Options

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- 9) **Which of the following is true?**
- a) Long positions get assigned, short positions exercise
  - b) Long positions exercise, short positions get assigned
  - c) Long and short positions can exercise
  - d) Long and short positions can get assigned
- 10) **XYZ is trading for \$74. The XYZ \$70 call is trading for \$4.50. What are the intrinsic and time values?**
- a) \$4 intrinsic, 50 cents time
  - b) \$4.50 intrinsic, \$0 time
  - c) 50 cents intrinsic, \$4 time
  - d) \$0 intrinsic, \$4.50 time
- 11) **ABC is trading for \$107. The ABC \$110 call is trading for \$4. What are the intrinsic and time values?**
- a) \$1 intrinsic, \$3 time
  - b) \$3 intrinsic, \$1 time
  - c) \$0 intrinsic, \$4 time
  - d) \$4 intrinsic, \$0 time
- 12) **An option is bidding \$3 and asking \$3.20. What does this mean?**
- a) The highest price that someone will pay is \$3 and the lowest price at which someone will sell is \$3.20.
  - b) The highest price that someone will pay is \$3.20 and the lowest price at which someone will sell is \$3.
  - c) You can currently buy the option for \$3.20 and sell it for \$3
  - d) Both a and c
- 13) **The bid and ask represent the:**
- a) Lowest bidder and highest offer
  - b) Highest bidder and highest offer
  - c) Highest bidder and lowest offer
  - d) Lowest bidder and lowest offer
- 14) **Microsoft is trading for \$29 and the \$30 put is trading for \$2.50. This put is:**
- a) \$1 in-the-money
  - b) \$1 out-of-the-money

## Options Trading 101

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- c) \$2.50 in-the-money
  - d) \$2.50 out-of-the-money
- 15) **ABC stock is trading for \$47. You just purchased an ABC \$45 call for \$3. If the stock remains at \$47 at expiration, what is the amount, if any, you will lose on this option?**
- a) \$0
  - b) \$1
  - c) \$2
  - d) \$3
- 16) **If you wish to exercise an option, you must:**
- a) Find a buyer or seller
  - b) Do so only at expiration
  - c) Submit assignment instructions
  - d) Submit exercise instructions
- 17) **The OCC:**
- a) Guarantees an option's profit
  - b) Is the buyer to every seller and seller to every buyer
  - c) Acts as a mediator for disputes
  - d) Requires you to become a member before trading options
- 18) **Options trade in units called:**
- a) Contracts
  - b) Shares
  - c) Round lots
  - d) OCC units
- 19) **The last trading day for options is:**
- a) The second Thursday of the expiration month
  - b) The second Friday of the expiration month
  - c) The third Friday of the expiration month
  - d) Saturday following the third Friday
- 20) **Because a portion of an option's value declines over time, options are referred to as:**
- a) Physical delivery assets
  - b) Wasting assets

## Introduction to Options

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- c) Linear assets
  - d) Cash delivery assets
- 21) Which “style” are all equity options?
- a) Bermudan
  - b) Asian
  - c) European
  - d) American
- 22) If you sell a put option, you have:
- a) The potential obligation to buy stock
  - b) The potential obligation to sell stock
  - c) The right to buy stock
  - d) The right to sell stock
- 23) If you sell a call option, you have:
- a) The potential obligation to buy stock
  - b) The potential obligation to sell stock
  - c) The right to buy stock
  - d) The right to sell stock
- 24) If you sell an option, you collect a premium. What happens to that premium if you are assigned?
- a) You only keep the premium if you are assigned
  - b) Option sellers do not receive the premium
  - c) You keep the premium regardless of whether you’re assigned or not
  - d) You only keep the premium if you are not assigned
- 25) If you buy or sell an option, you can escape your obligations by:
- a) Entering a reversing trade in a different month
  - b) Entering a reversing trade at a different strike
  - c) Entering the same trade again
  - d) Entering a reversing trade

### Chapter One Answers

**1) Call options give buyers the:**

- b) Right to buy stock

Long options always give the buyer some type of right. You will never incur an obligation by purchasing an option. Call options give buyers the right, not the obligation, to buy stock. If you buy a call, you can purchase 100 shares of the underlying stock at any time for the strike price.

**2) Put options give buyers the:**

- d) Right to sell stock

Put buyers have the right, not the obligation, to sell stock. The put owner can sell 100 shares of stock and receive the strike price at any time through expiration.

**3) Option sellers:**

- d) Both b and c

Option sellers receive a premium for accepting an obligation. The seller of a call has the potential obligation to sell shares of stock for the strike price while the put seller has the potential obligation to buy shares of stock for the strike price.

**4) One option contract generally controls how many shares of stock?**

- d) 100

When options are first issued, they generally control 100 shares of stock.

**5) You bought an Intel \$25 call. The “\$25” figure is called the:**

- c) Strike price or exercise price

The price at which you are contracting to trade shares of stock is the exercise price. It is also called the strike price because that's where the deal was “struck.”

**6) The intrinsic value of an option represents the:**

- b) Immediate benefit

For call options, the intrinsic value is found by taking the stock price minus the strike price, assuming it is a positive amount. For put options, we take the strike price minus the stock price, assuming it is positive. With the stock at \$55, a \$50 call has  $\$55 - \$50 = \$5$  of intrinsic value. A \$60 call has no intrinsic value since

## Introduction to Options

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$\$55 - \$60 = \text{negative } \$5$ . Likewise, a  $\$50$  put has no intrinsic value since  $\$50 - \$55 = \text{negative } \$5$ . The intrinsic value represents the amount of “immediate benefit” to the owner. If the stock is  $\$55$ , the  $\$50$  call owner is better off by  $\$5$  since he can pay  $\$50$  for the stock rather than  $\$55$ . The  $\$60$  put holder can sell his stock for  $\$5$  more than the current market price of  $\$55$  so he is better off by  $\$5$  as well. Whenever you are trying to figure out the intrinsic value, think if there is an immediate benefit in owning that option. If there is, it has intrinsic value. The intrinsic value is also the amount that the option is in-the-money.

**7) You are long an ABC  $\$40$  call. How much will it cost to exercise the call?**

c)  $\$4,000$

Each contract controls 100 shares of stock and you have the right to buy it for  $\$40$  per share. Therefore, it will cost 100 shares \*  $\$40$  per share =  $\$4,000$  to exercise the call. In return, you will receive 100 shares of ABC.

**8) If you are “long” options:**

a) You are not required to ever buy or sell the stock

If you are long options, whether calls or puts, you have rights. This means you are not required to ever buy or sell stock. You can buy or sell stock if you choose. It is your *option* to do so.

**9) Which of the following is true?**

b) Long positions exercise, short positions get assigned

Long positions have the rights. It is the long position that decides whether or not to exercise. If the long position exercises then the short position must oblige. The short position has the obligation.

**10) XYZ is trading for  $\$74$ . The XYZ  $\$70$  call is trading for  $\$4.50$ . What are the intrinsic and time values?**

a)  $\$4$  intrinsic, 50 cents time

There is an immediate advantage in owning this call since it gives the buyer the right to pay  $\$70$  for a stock that is trading for  $\$74$ . Specifically, there is a  $\$4$  advantage so that is the intrinsic value. The remaining 50 cents of value is due to time.

## Options Trading 101

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**11) ABC is trading for \$107. The ABC \$110 call is trading for \$4. What are the intrinsic and time values?**

- c) \$0 intrinsic, \$4 time

There is no immediate benefit in holding this call since it gives the buyer the right to pay \$110 for a stock that is currently trading for \$107. Therefore, there is no intrinsic value to this option. However, this does not mean the option has no value. Because time remains on the option, the stock does have a chance of rising above \$110. All of this option's value is due to the fact that time remains on the option.

**12) An option is bidding \$3 and asking \$3.20. What does this mean?**

- d) Both a and c

The bid represents the highest price that someone is willing to pay. In other words, it represents the highest bidder. The asking price represents the lowest price at which someone will sell. Because someone is willing to pay \$3, this means we can sell to that person if we wish to sell this option. Likewise, because someone is willing to sell for \$3.20, we can buy the option for this price.

**13) The bid and ask represent the:**

- c) Highest bidder and lowest offer.

**14) Microsoft is trading for \$29 and the \$30 put is trading for \$2.50. This put is:**

- a) \$1 in-the-money

Put options give the holder the right to sell stock. Because this put allows the holder to sell for \$30 when the stock is trading for \$29, there is a \$1 immediate benefit in holding this put. Therefore, this put is \$1 in-the-money.

**15) ABC stock is trading for \$47. You just purchased an ABC \$45 call for \$3. If the stock remains at \$47 at expiration, what is the amount, if any, you will lose on this option?**

- b) \$1

This call has \$2 intrinsic value and \$1 time value. If the stock is \$47 at expiration, this option will be worth the \$2 intrinsic value so the most you could lose is the \$1 time value. Remember, the key to this question is that the stock remains at \$47 at expiration. It is true that the most you could ever lose on this (or any) option

## Introduction to Options

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is the amount paid, or \$3 in this example. But the question is assuming the stock remains at \$47. The only way you could lose more than the \$1 time value is if the stock's price falls below \$47.

**16) If you wish to exercise an option, you must:**

- d) Submit exercise instructions

You are free to exercise an equity option at any time and the OCC guarantees the performance so there's no need to find a buyer or seller. The only thing you must do is submit exercise instructions to your broker which is done with a simple phone call.

**17) The OCC:**

- b) Is the buyer to every seller and seller to every buyer

The OCC acts as a middleman to every transaction. If you buy an option, you are really buying it from the OCC. If you sell an option, you are selling it to the OCC.

**18) Options trade in units called:**

- a) Contracts

Options trade in units called "contracts" because that's what they are – contracts between two people to buy and sell shares of stock. Stock trades in "shares" while options trade in "contracts."

**19) The last trading day for options is:**

- c) The third Friday of the expiration month

The last trading day is the third Friday of the expiration month. Technically, options expire on Saturday following the third Friday but the last "trading" day is the third Friday.

**20) Because a portion of an option's value declines over time, options are referred to as:**

- b) Wasting assets

A wasting asset is one whose price declines with the passage of time. Some options decline very little while others decline much more and much faster. Regardless, all options are classified as a wasting asset.

## Options Trading 101

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**21) Which “style” are all equity options?**

- d) American

All equity options are American style, which means you can exercise them at any time prior to expiration. Bermudan and Asian options are actually styles too but they fall under the category of exotic options.

**22) If you sell a put option, you have:**

- a) The potential obligation to buy stock

Put sellers have the potential obligations to buy stock. They must buy the stock only if the long put holder decides to exercise.

**23) If you sell a call option, you have:**

- b) The potential obligation to sell stock

Call sellers have to sell stock only if the long call holder exercises.

**24) If you sell an option, you collect a premium. What happens to that premium if you are assigned?**

- c) You keep the premium regardless of whether you’re assigned or not

Option sellers always keep the premium regardless of what happens. That is their fee for accepting some type of obligation (risk).

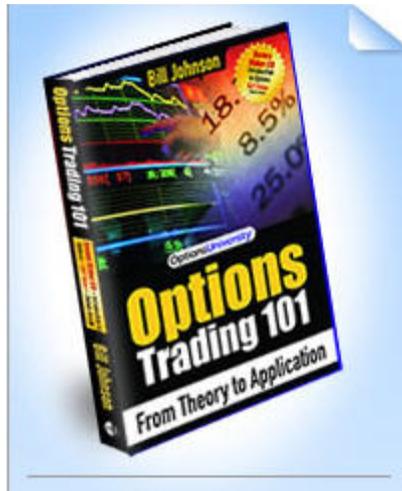
**25) If you buy or sell an option, you can escape your obligations by:**

- d) Entering a reversing trade

You can always get out of an option contract by entering a reversing trade of the same month and strike. If you originally purchased an ABC \$50 call you would enter a reversing trade by selling an ABC \$50 call.

**Next Chapter:**

**Chapter Two**  
*Option Pricing Principles*



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# Options Trading 101

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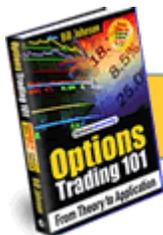
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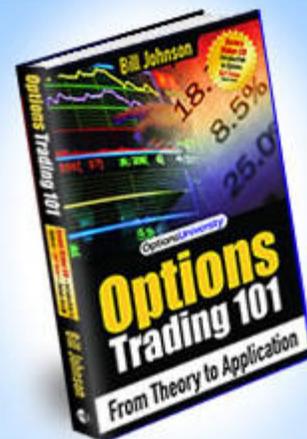
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