

Options

INTRODUCTION

An option is a contract between two parties that determines the time and price at which a stock may be bought or sold. The two parties to the contract are the buyer and the seller. The buyer of the option pays money, known as the option's premium, to the seller. For this premium, the buyer obtains a right to buy or sell the stock, depending on what type of option is involved in the transaction. Because the seller received the premium from the buyer, it now has an obligation to perform under that contract. Depending on the option involved, the seller may have an obligation to buy or sell the stock. Series 7 candidates can expect to see a large number of questions on options. Most of these questions will be on equity options. The remaining questions will cover nonequity options. We will begin with equity options.

OPTION CLASSIFICATION

Options are classified as to their type, class, and series. There are two types of options: calls and puts.

CALL OPTIONS

A call option gives the buyer the right to buy, or to "call," the stock from the option seller at a specific price for a certain period of time. The sale of a call

option obligates the seller to deliver or sell that stock to the buyer at that specific price for a certain period of time.

PUT OPTIONS

A put option gives the buyer the right to sell, or to “put,” the stock to the seller at a specific price for a certain period of time. The sale of a put option obligates the seller to buy the stock from the buyer at that specific price for a certain period of time.

OPTION CLASSES

An option class consists of all options of the same type for the same underlying stock. For example, all XYZ calls would be one class of options and all XYZ puts would be another class of option.

Class 1	Class 2
XYZ June 50 Calls	XYZ June 50 Puts
XYZ June 55 Calls	XYZ June 55 Puts
XYZ July 50 Calls	XYZ July 50 Puts
XYZ July 55 Calls	XYZ July 55 Puts
XYZ August 50 Calls	XYZ August 50 Puts

OPTION SERIES

An option series is the most specific classification of options and consists of only options of the same class with the same exercise price and expiration month. For example, all XYZ June 50 calls would be one series of options, and all XYZ June 55 calls would be another series of options.

BULLISH VS. BEARISH

BULLISH

Investors who believe that a stock price will increase over time are said to be bullish. Investors who buy calls are bullish on the underlying stock. That is, they believe that the stock price will rise and they have paid for the right to purchase the stock at a specific price, known as the exercise price or strike

price. An investor who has sold puts is also considered to be bullish on the stock. The seller of a put has an obligation to buy the stock and, therefore, believes that the stock price will rise.

BEARISH

Investors who believe that a stock price will decline are said to be bearish. The seller of a call has an obligation to sell the stock to the purchaser at a specified price and believes that the stock price will fall and is therefore bearish. The buyer of a put wants the price to drop so that the stock can be sold at a higher price to the seller of the put contract. These investors are also considered to be bearish on the stock.

	Calls	Puts
Buyers	Bullish Have right to buy stock, want stock price to rise	Bearish Have right to sell stock, want stock price to fall
Sellers	Bearish Have obligation to sell stock, want stock price to fall	Bullish Have obligation to buy stock, want stock price to rise

Buyer vs. Seller

Buyer		Seller
Owner	Known as	Writer
Long		Short
Rights	Has	Obligations
Maximum speculative profit	Objective	Premium income
With an opening purchase	Enters the contract	With an opening sale
Exercise	Wants the option to	Expire

POSSIBLE OUTCOMES FOR AN OPTION

EXERCISED

If the option is exercised, the buyer has elected to exercise the right to buy or sell the stock, depending on the type of option involved. Exercising an option obligates the seller to perform under the contract.

SOLD

Most individual investors will elect to sell their rights to another investor rather than exercise their rights. The investor who buys the option from them will acquire all the rights of the original purchaser.

EXPIRE

If the option expires, the buyer has elected not to exercise the right, and the seller of the option is relieved of the obligation to perform.

EXERCISE PRICE

The exercise price is the price at which an option buyer may buy or sell the underlying stock, depending on the type of option involved in the transaction. The exercise price is also known as the strike price.

CHARACTERISTICS OF ALL OPTIONS

All standardized option contracts are issued and their performance is guaranteed by the Options Clearing Corporation (OCC). Standardized options trade on the exchanges, such as the Chicago Board Options Exchange and the American Stock Exchange.

All option contracts are for one round lot of the underlying stock or 100 shares. To determine the amount that an investor either paid or received for the contract take the premium and multiply it by 100. If an investor paid \$4 for 1 KLM August 70 call, the investor paid \$400 for the right to buy 100 shares of KLM at \$70 per share until August. If another investor paid \$2 for 1 JTJ May 50 put, the investor paid \$200 for the right to sell 100 shares of JTJ at \$50 until May.

MANAGING AN OPTION POSITION

In an option trade, both the buyer and seller establish the position with an opening transaction. The buyer has an opening purchase, and the seller has an opening sale. To exit the option position, an investor must “close out” the position. The buyer of the option may exit a position through:

- A closing sale.
- Exercising the option.

- Allowing the option to expire.

The seller of an option may exit or close out a position through:

- A closing purchase.
- Having the option exercised or assigned to the seller.
- Allowing the option to expire.

Most individual investors do not exercise their options and will simply buy and sell options in much the same way as they would buy or sell other securities.

BUYING CALLS

Investors who purchase a call believe that the underlying stock price will rise and that they will be able to profit from the price appreciation. Investors who purchase calls can control the underlying stock and profit from its appreciation while limiting their loss to the amount of the premium paid for the calls. Buying calls allows investors to maximize their leverage, and they may realize a more significant percentage return based on their investment. When looking to establish a position, buyers must determine:

- Their maximum gain
- Their maximum loss
- Their breakeven

MAXIMUM GAIN LONG CALLS

When an investor has a long call position, the maximum gain is always unlimited. The investor profits from a rise in the stock price. Because there is no limit to how high a stock price may rise, the maximum gain is unlimited, just as with a stock.

MAXIMUM LOSS LONG CALLS

Whenever an investor is long or owns a stock, the maximum loss is always limited to the amount invested. When investors purchase a call option, the amount they pay for the option, or their premium, is always going to be their maximum loss.

DETERMINING THE BREAKEVEN FOR LONG CALLS

An investor who has purchased calls must determine where the stock price must be at expiration in order for the investor to breakeven on the transaction. An investor who has purchased calls has paid the premium to the seller in the hopes that the stock price will rise. The stock must appreciate by enough to cover the cost of the investor's option premium in order to breakeven at expiration. To determine an investor's breakeven point on a long call use the following formula:

$$\text{breakeven} = \text{strike price} + \text{premium}$$

EXAMPLE

An investor has established the following option position:

Long 1 XYZ May 30 call at 3

The investor's maximum gain, maximum loss, and breakeven will be:

Maximum gain: Unlimited

Maximum loss: \$300 (the amount of the premium paid)

Breakeven: $\$33 = 30 + 3$ (strike price + premium)

If at expiration XYZ is at exactly \$33 per share and the investor sells or exercises the option, the investor will breakeven, excluding transactions costs.

SELLING CALLS

Investors who sell calls believe that the underlying stock price will fall and that they will be able to profit from a decline in the stock price. An investor who sells a call is obligated to deliver the underlying stock if the buyer decides to exercise the option. When looking to establish a position, sellers must determine:

- Their maximum gain
- Their maximum loss
- Their breakeven

MAXIMUM GAIN SHORT CALLS

For an investor who has sold uncovered or naked calls, the maximum gain is always limited to the amount of the premium the investor received when the calls were sold.

MAXIMUM LOSS SHORT CALLS

An investor who has sold uncovered or naked calls does not own the underlying stock and, as a result, has unlimited risk and the potential for an unlimited loss. The seller of the calls is subject to a loss if the stock price increases. Because there is no limit to how high a stock price may rise, there is no limit to the amount of the investor's loss.

DETERMINING THE BREAKEVEN FOR SHORT CALLS

An investor who has sold calls must determine where the stock price must be at expiration in order to breakeven on the transaction. An investor who has sold calls has received the premium from the buyer in the hopes that the stock price will fall. If the stock appreciates, the investor may begin to lose money. The stock price may appreciate by the amount of the option premium received, and the investor will still breakeven at expiration. To determine an investor's breakeven point on a short call use the following formula:

$$\text{breakeven} = \text{strike price} + \text{premium}$$

EXAMPLE

An investor has established the following option position:

Short 1 XYZ May 30 call at 3

The investor's maximum gain, maximum loss, and breakeven will be:

Maximum gain: \$300 (the amount of the premium received)

Maximum loss: Unlimited

Breakeven: \$33 = 30 + 3 (strike price + premium)

If at expiration XYZ is at exactly \$33 per share and the investor closes out the transaction with a closing purchase or has the option exercised against him or her, the investor will breakeven, excluding transactions costs.

Notice the relationship between the buyer and the seller:

	Call Buyer	Call Seller
Maximum gain	Unlimited	Premium received
Maximum loss	Premium paid	Unlimited
Breakeven	Strike price + premium	Strike price + premium
Wants option to	Exercise	Expire

Because an option is a two-party contract, the buyer's maximum gain is the seller's maximum loss, and the buyer's maximum loss is the seller's maximum gain. Both the buyer and the seller will breakeven at the same point.

BUYING PUTS

Investors who purchase puts believe that the underlying stock price will fall and that they will be able to profit from a decline in the stock price. Investors who purchase puts can control the underlying stock and profit from its price decline while limiting their loss to the amount of the premium paid for the puts. Buying puts allows investors to maximize their leverage while limiting their losses. Thus, they may realize a more significant percentage return based on their investment. When looking to establish a position, buyers must determine:

- Their maximum gain
- Their maximum loss
- Their breakeven

MAXIMUM GAIN LONG PUTS

An investor who has purchased a put believes that the stock price will fall. There is, however, a limit to how far a stock price may decline. A stock price may never fall below zero. As a result, the investor who believes that the stock price will fall has a limited maximum gain. To determine the maximum gain for the buyer of a put, use the following formula:

$$\text{maximum gain} = \text{strike price} - \text{premium}$$

MAXIMUM LOSS LONG PUTS

Whenever an investor is long or owns a stock, the maximum loss is always limited to the amount invested. When an investor purchases a put option, the amount the investor paid for the option or the premium is always going to be the maximum loss.

DETERMINING THE BREAKEVEN FOR LONG PUTS

An investor who has purchased a put believes that the stock price will decline. In order for the investor to breakeven on the transaction, the stock price must

fall by enough to offset the amount of the premium paid for the option. At expiration the investor will breakeven at the following point:

$$\text{breakeven} = \text{strike price} - \text{premium}$$

EXAMPLE

An investor has established the following option position:

Long 1 XYZ May 30 put at 4

The investor's maximum gain, maximum loss, and breakeven will be:

Maximum gain: \$26, or \$2,600 for the whole position (strike price – premium)

Maximum loss: \$400 (the amount of the premium paid)

Breakeven: $\$26 = 30 - 4$ (strike price – premium)

If at expiration XYZ is at exactly \$26 per share and the investor sells or exercises the option, the investor will breakeven, excluding transactions costs.

SELLING PUTS

Investors who sell puts believe that the underlying stock price will rise and that they will be able to profit from a rise in the stock price. An investor who sells a put is obligated to purchase the underlying stock if the buyer decides to exercise the option. When looking to establish a position, sellers must determine:

- Their maximum gain
- Their maximum loss
- Their breakeven

MAXIMUM GAIN SHORT PUTS

For an investor who has sold uncovered or naked puts, the maximum gain is always limited to the amount of the premium received when the puts were sold.

MAXIMUM LOSS SHORT PUTS

An investor who has sold a put believes that the stock price will rise. There is, however, a limit to how far a stock price may decline. A stock price may never fall below zero. As a result, the investor who believes that the stock price will rise has a limited maximum loss. The worst thing that

can happen for investors who are short a put is that the stock goes to zero and they are forced to purchase it at the strike price from the owner of the put. To determine the maximum loss for the seller of a put, use the following formula:

$$\text{maximum loss} = \text{strike price} - \text{premium}$$

DETERMINING THE BREAKEVEN FOR SHORT PUTS

Whenever investors have sold a put, they believe that the stock price will rise. If the stock price begins to fall, the investor becomes subject to loss. In order for the investor to breakeven on the transaction, the stock price must fall by the amount of the premium that was received for the option. At expiration, the investor will breakeven at the following point:

$$\text{breakeven} = \text{strike price} - \text{premium}$$

EXAMPLE

An investor has established the following option position:

Short 1 XYZ May 30 put at 4

The investor's maximum gain, maximum loss, and breakeven will be:

Maximum gain: \$400 (the amount of the premium received)

Maximum loss: \$26, or \$2,600 for the whole position (strike price – premium)

Breakeven: $\$26 = 30 - 4$ (strike price – premium)

If at expiration XYZ is at exactly \$26 per share and the investor closes out the position with a closing purchase or has the option exercised against him or her, the investor will breakeven, excluding transactions costs.

Notice the relationship between the buyer and the seller:

	Put Buyer	Put Seller
Maximum gain	Strike price – premium	Premium received
Maximum loss	Premium paid	Strike price – premium
Breakeven	Strike price – premium	Strike price – premium
Wants option to	Exercise	Expire

Because an option is a two-party contract, the buyer's maximum gain is the seller's maximum loss and the buyer's maximum loss is the seller's maximum gain. Both the buyer and the seller will breakeven at the same point.

OPTION PREMIUMS

The price of an option is known as its premium. Factors that determine the value of an option and, as a result, its premium, are:

- The relationship of the underlying stock price to the option's strike price.
- The amount of time to expiration.
- The volatility of the underlying stock.
- Supply and demand.
- Interest rates.

An option can be:

- In the money
- At the money
- Out of the money

These terms describe the relationship of the underlying stock to the option's strike price. These terms do not describe how profitable the position is.

IN THE MONEY OPTIONS

A call is in the money when the underlying stock price is greater than the call's strike price.

EXAMPLE

An XYZ June 40 call is \$2 in the money when XYZ is at \$42 per share.

A put is in the money when the underlying stock price is lower than the put's strike price.

EXAMPLE

An ABC October 70 put is \$4 in the money when ABC is at \$66 per share. It would only make sense to exercise an option if it was in the money.

AT THE MONEY OPTIONS

Both puts and calls are at the money when the underlying stock price equals the option's exercise price.

EXAMPLE

If FDR is trading at \$60 per share, all of the FDR 60 calls and all of the FDR 60 puts will be at the money.