Introduction to Options

Part Three – Option Combinations

Disclosure of Risks

Options involve risk and are not suitable for all investors. For more information, read the "Characteristics and Risks of Standardized Options" before investing in options. For a copy call 203- 618-5800 or click here.

Interactive Brokers LLC is a member of NYSE, FINRA, SIPC

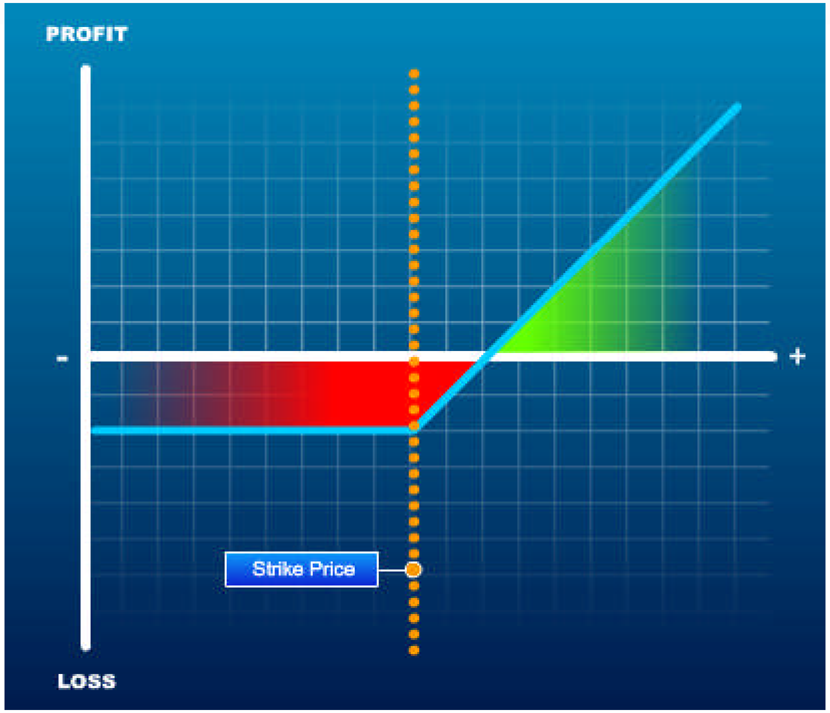
In order to simplify the computations, commissions, fees, margin interest and taxes have not been included in the examples used in these materials. These costs will impact the outcome of all stock and options transactions and must be considered prior to entering into any transactions. Investors should consult their tax advisor about any potential tax consequences.

Any strategies discussed, including examples using actual securities and price data, are strictly for illustrative and educational purposes only and are not to be construed as an endorsement, recommendation or solicitation to buy or sell securities. Past performance is not a guarantee of future results.

Most strategies involving futures and/or options spreads require a margin account.
Multiple leg strategies involve multiple commissions charges.
Supporting documentation for any claims and statistical information will be provided upon request.

Options Pricing

- ❑ Input Variables
- ❑ Greek Risk Measurements
- ❑ Combining Options
    - IB Options Calculator
    - See Options Combinations Flash Tour at Traders University on the IB website

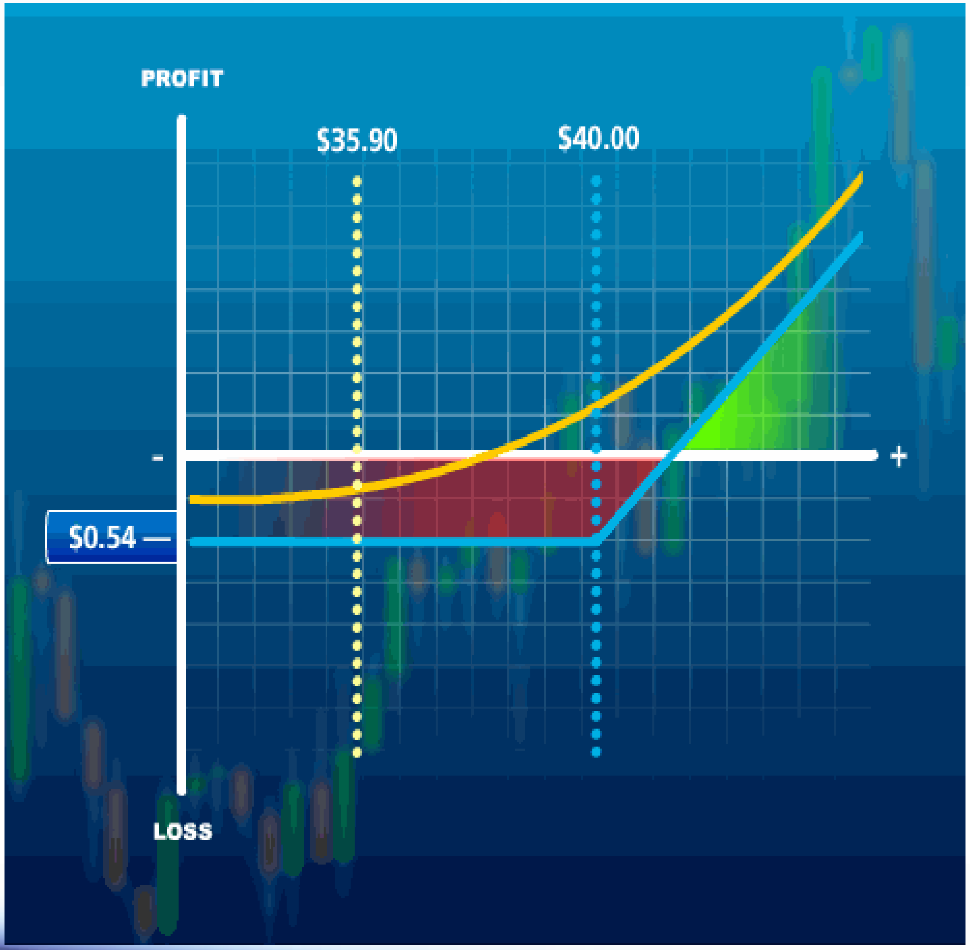


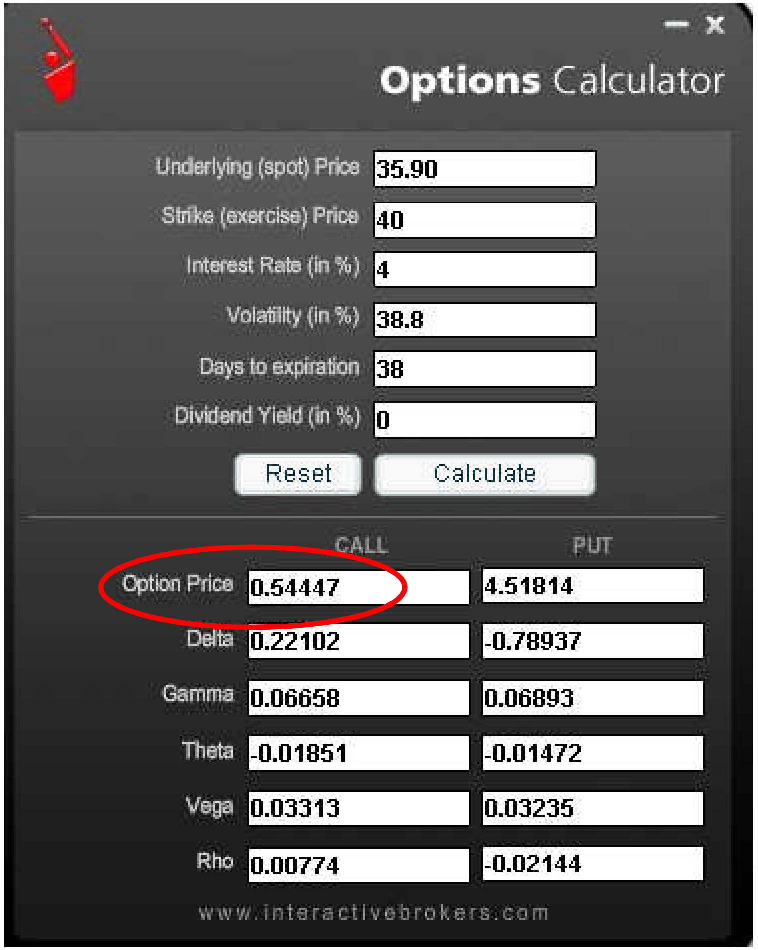
Options Pricing

- Deciding on a strategy
- Scenario exploration
- Impact on variables and risk measurements

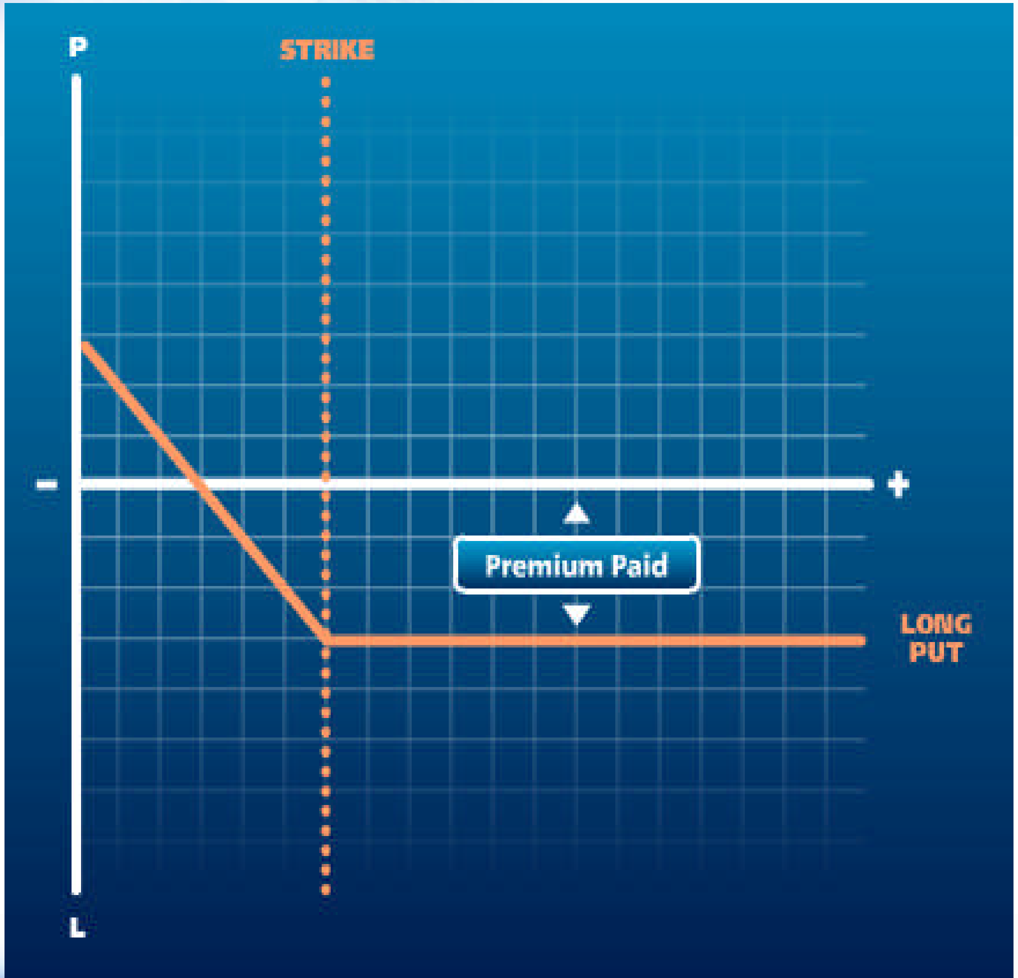
Interactive Brokers
The Professional's Gateway to the World's Markets

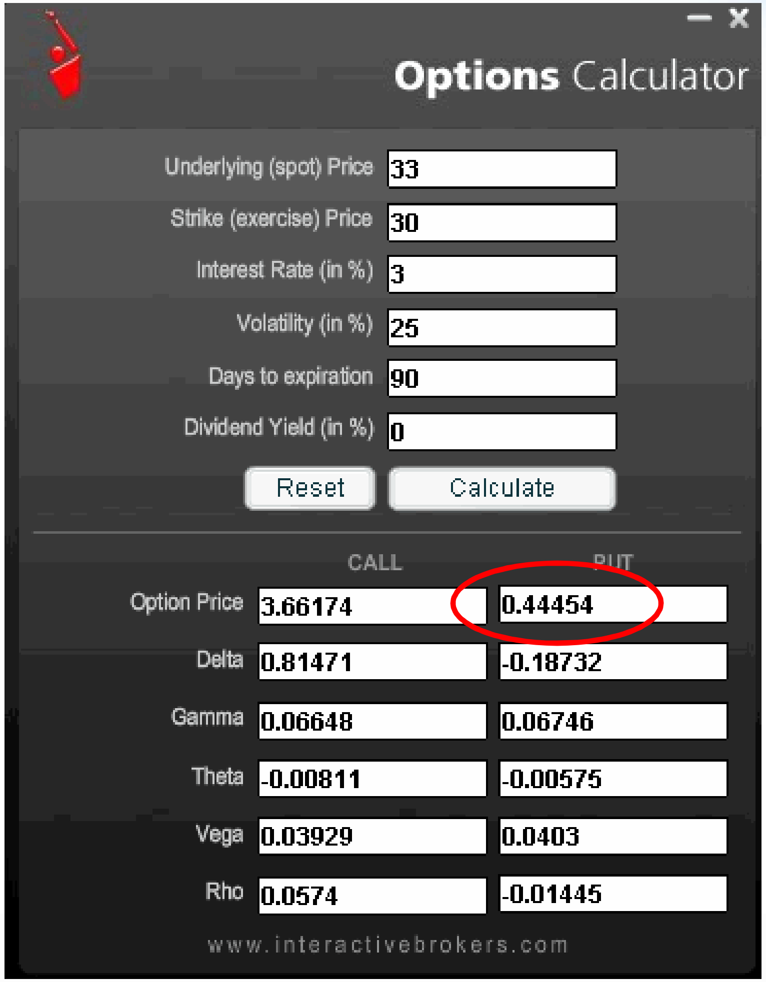
Long Call





Long Put





Options Calculator

Underlying (spot) Price	33
Strike (exercise) Price	30
Interest Rate (in %)	3
Volatility (in %)	25
Days to expiration	90
Dividend Yield (in %)	0

Reset Calculate

	CALL	PUT
Option Price	3.66174	0.44454
Delta	0.81471	-0.18732
Gamma	0.06648	0.06746
Theta	-0.00811	-0.00575
Vega	0.03929	0.0403
Rho	0.0574	-0.01445

www.interactivebrokers.com

Long Put – if stock price falls…

Options Calculator

Underlying (spot) Price	33
Strike (exercise) Price	30
Interest Rate (in %)	3
Volatility (in %)	25
Days to expiration	90
Dividend Yield (in %)	0

Reset Calculate

	CALL	PUT
Option Price	3.66174	0.44454
Delta	0.81471	-0.18732
Gamma	0.06648	0.06746
Theta	-0.00811	-0.00575
Vega	0.03929	0.0403
Rho	0.0574	-0.01445

www.interactivebrokers.com

Options Calculator

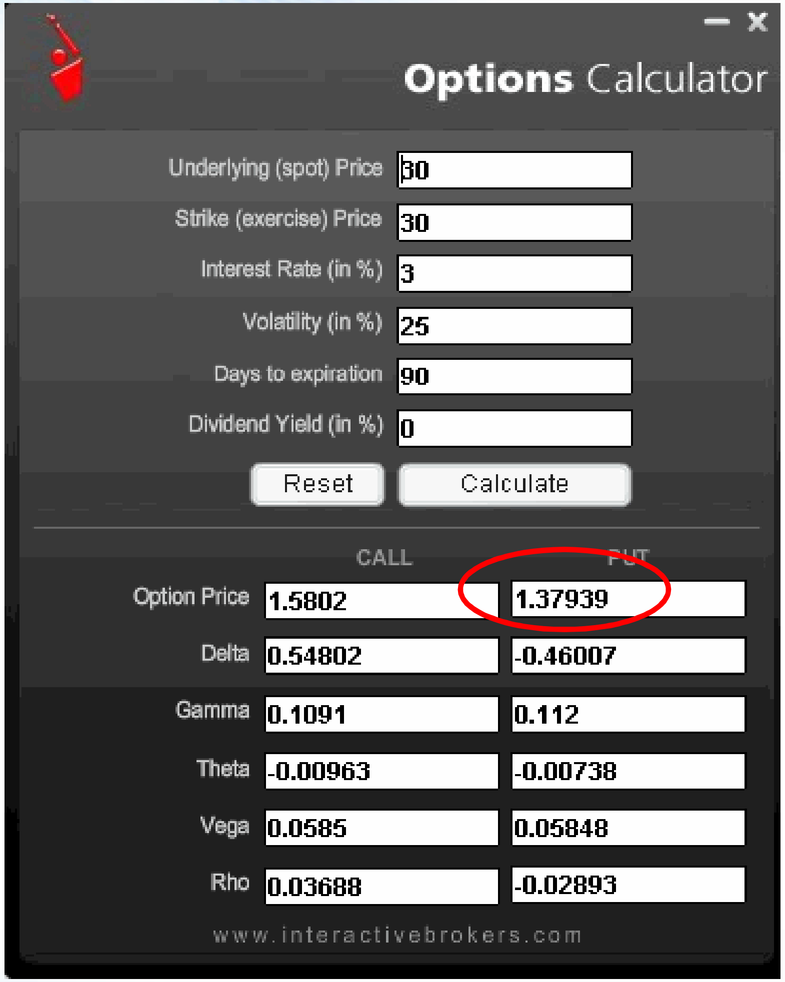
Underlying (spot) Price	30
Strike (exercise) Price	30
Interest Rate (in %)	3
Volatility (in %)	25
Days to expiration	90
Dividend Yield (in %)	0

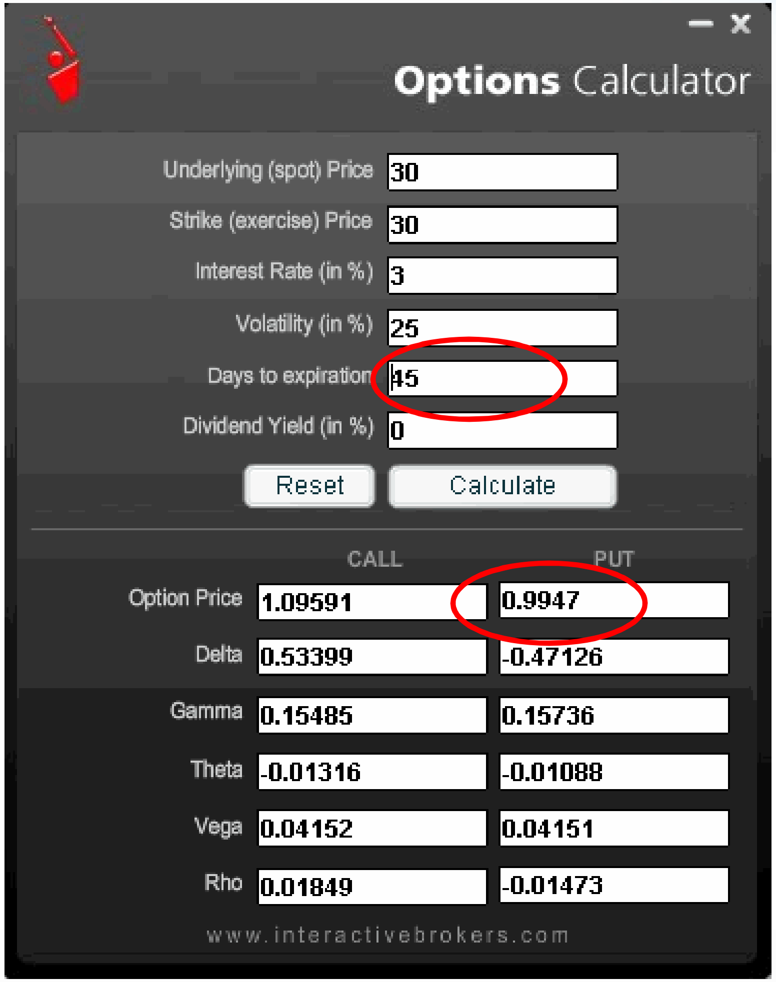
Reset Calculate

	CALL	PUT
Option Price	1.5802	1.37939
Delta	0.54802	-0.46007
Gamma	0.1091	0.112
Theta	-0.00963	-0.00738
Vega	0.0585	0.05848
Rho	0.03688	-0.02893

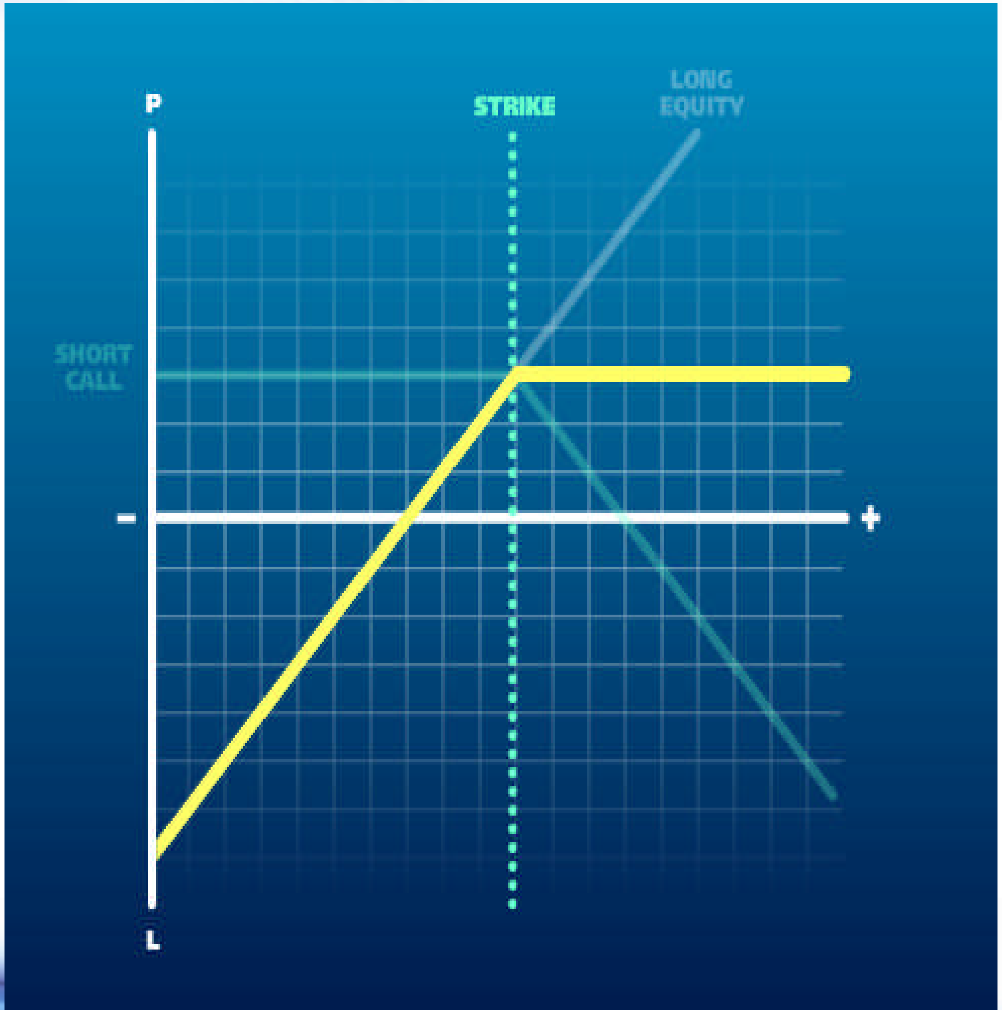
www.interactivebrokers.com

Long Put – if stock price falls…



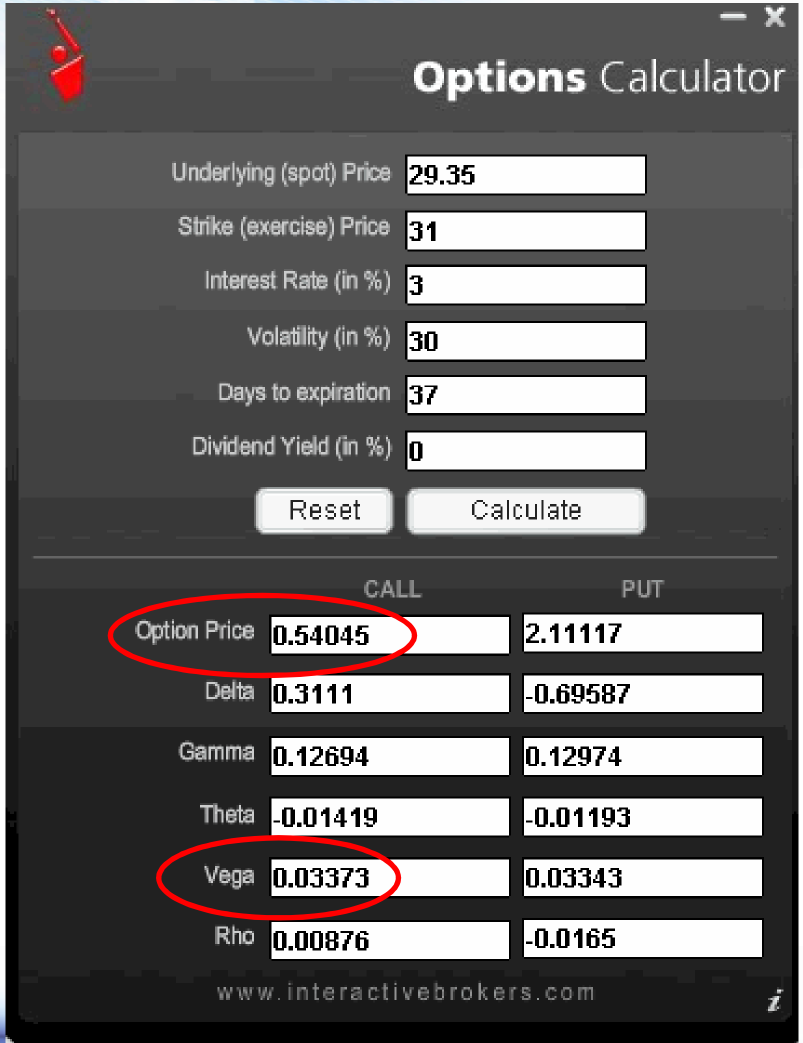


Covered Call



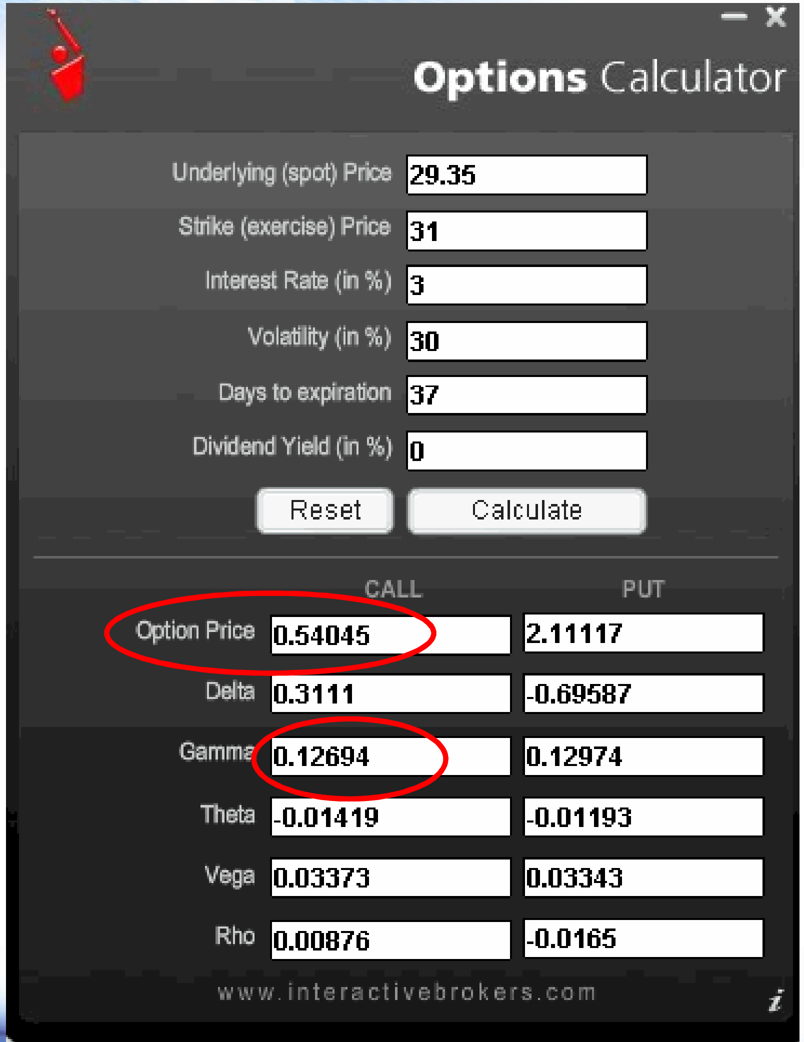
- Long Equity
- Sell or write call option

Covered Call



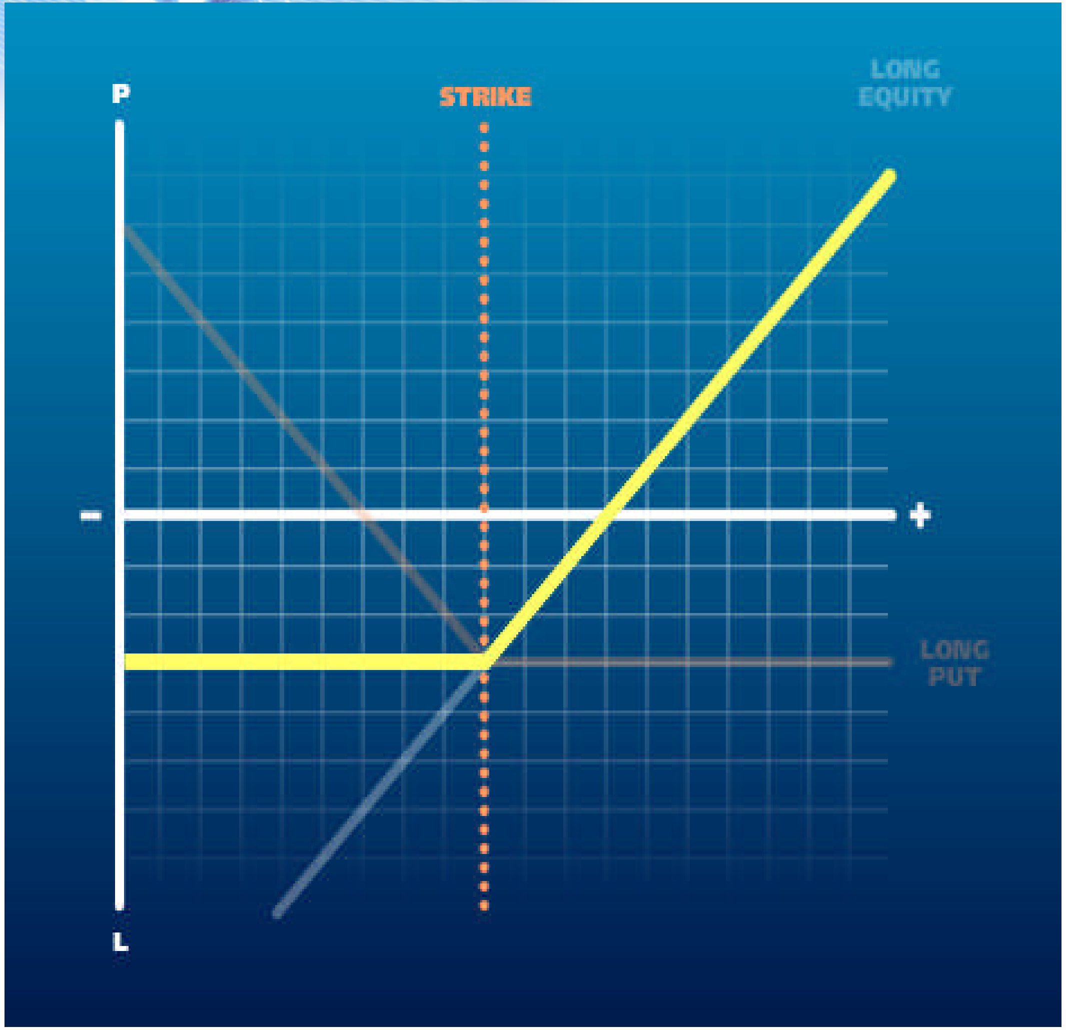
- Existing variables provide call option value
- Vega tells us that a 1% rise in implied volatility might boost option price by 3 cents

Covered Call



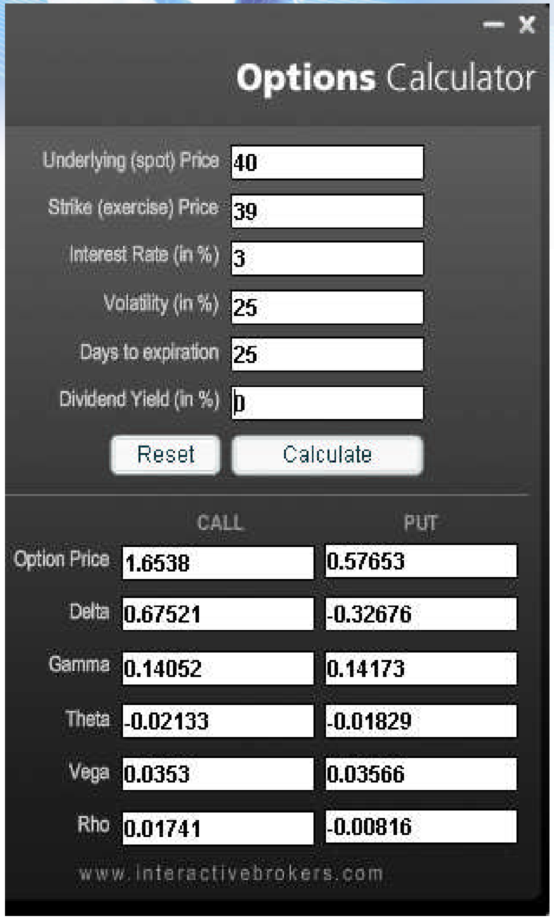
- ❑ Out-of-the-money option contains ONLY extrinsic value
- ❑ Theta may favor the trade
- ❑ Falling volatility may help

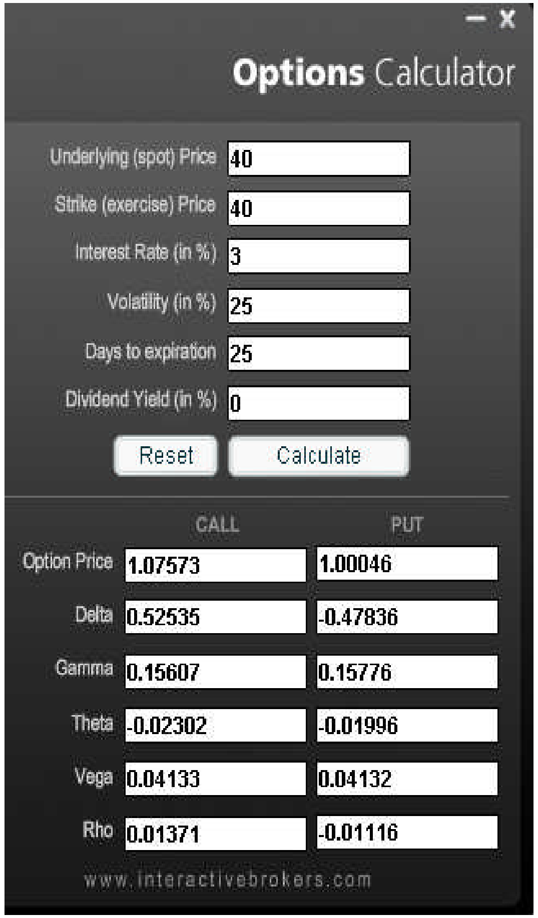
Protective Put

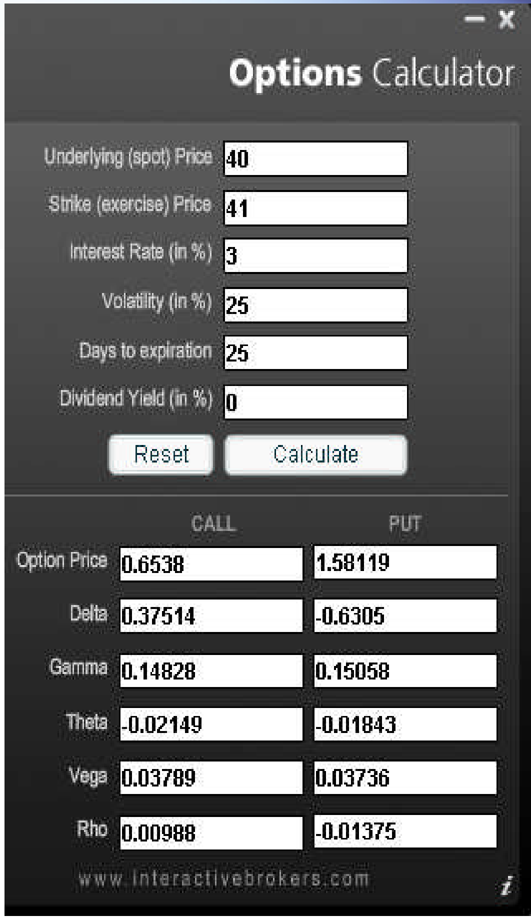


- Long equity
- Long put
- Use of a protective put increases the breakeven on the stock position by the cost of put

Protective Put





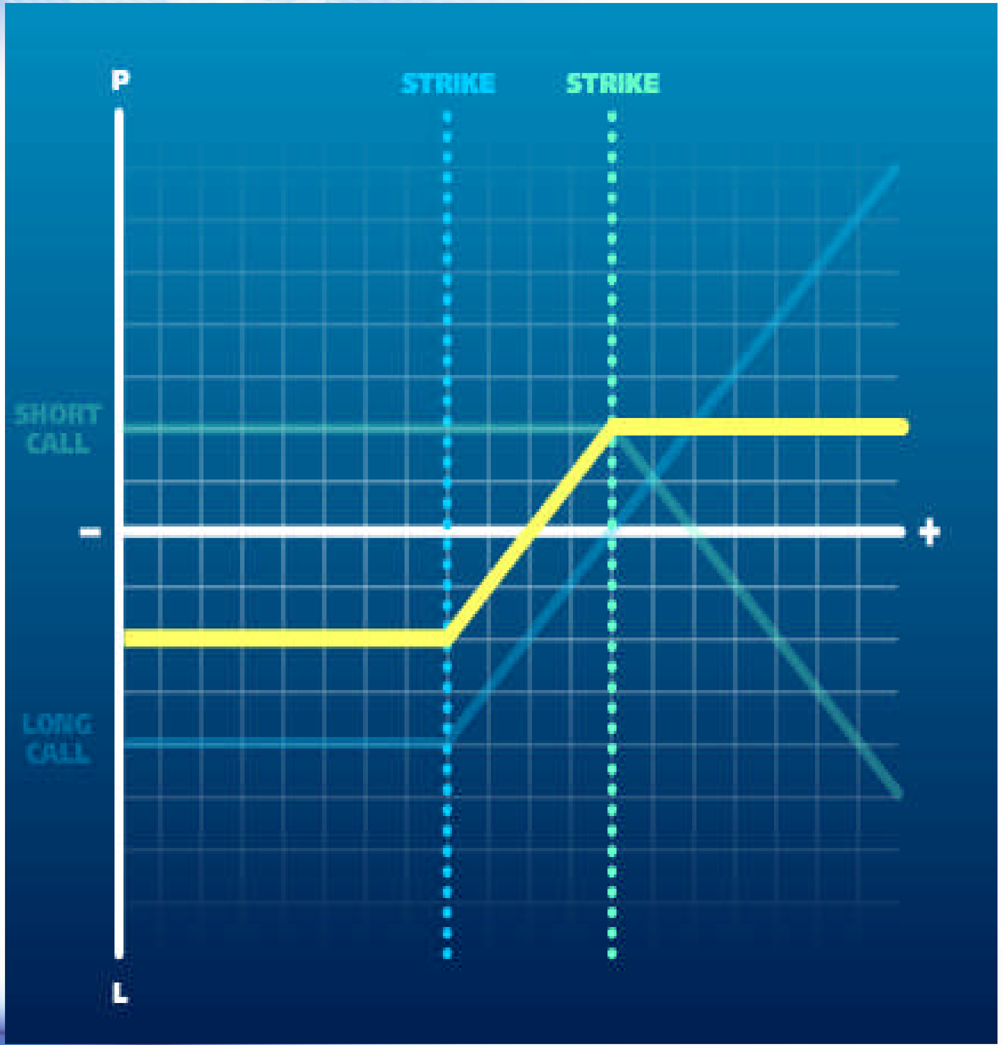


Strike $39.00 - $1.65 = B/e of $37.35

Strike $40.00 - $1.08 = B/e of $38.92

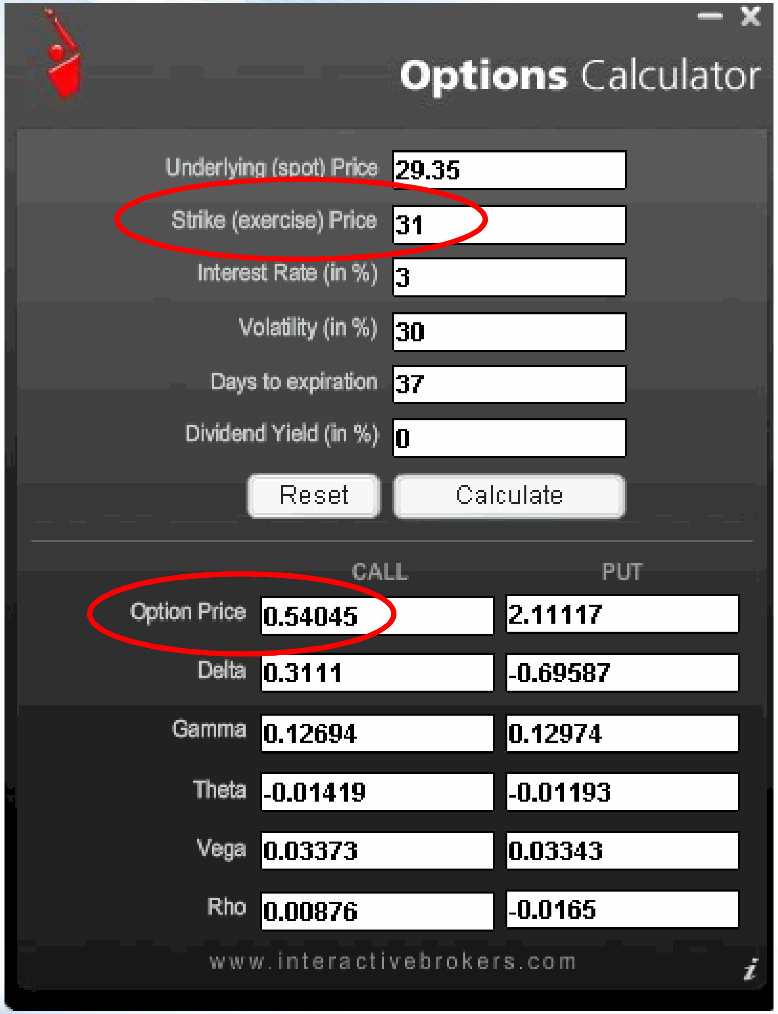
Strike $41.00 - $0.65 = B/e of $40.35

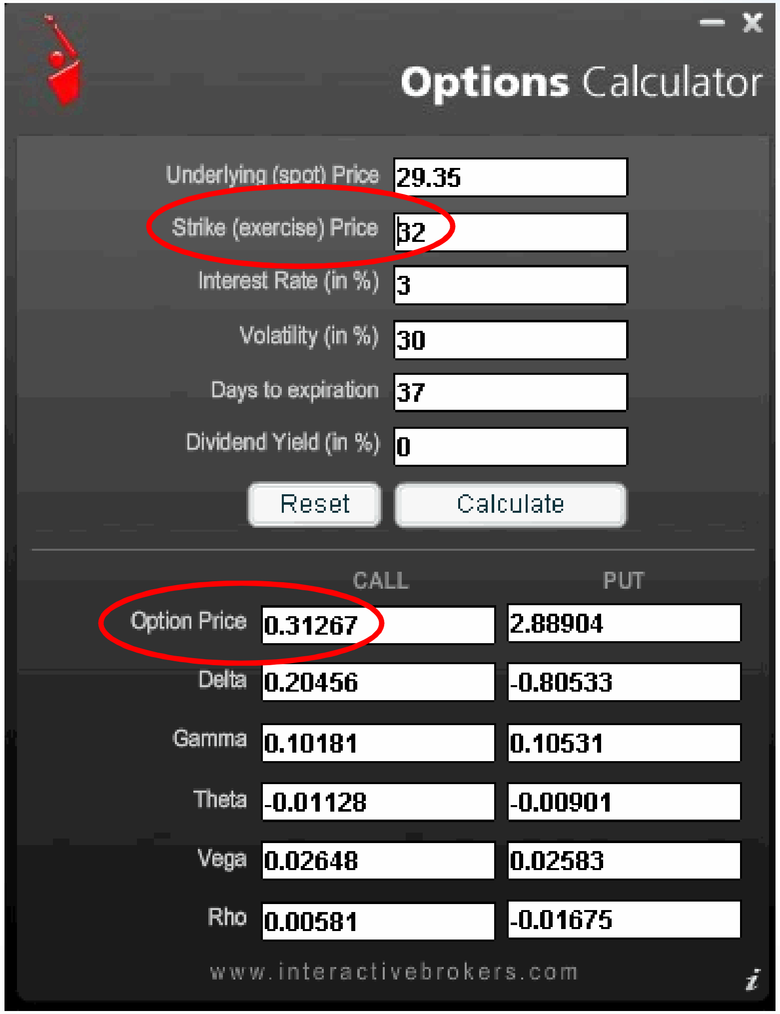
Bull Call Spread



- Seeks upside potential from stock
- Buy call, sell call
- Profits limited

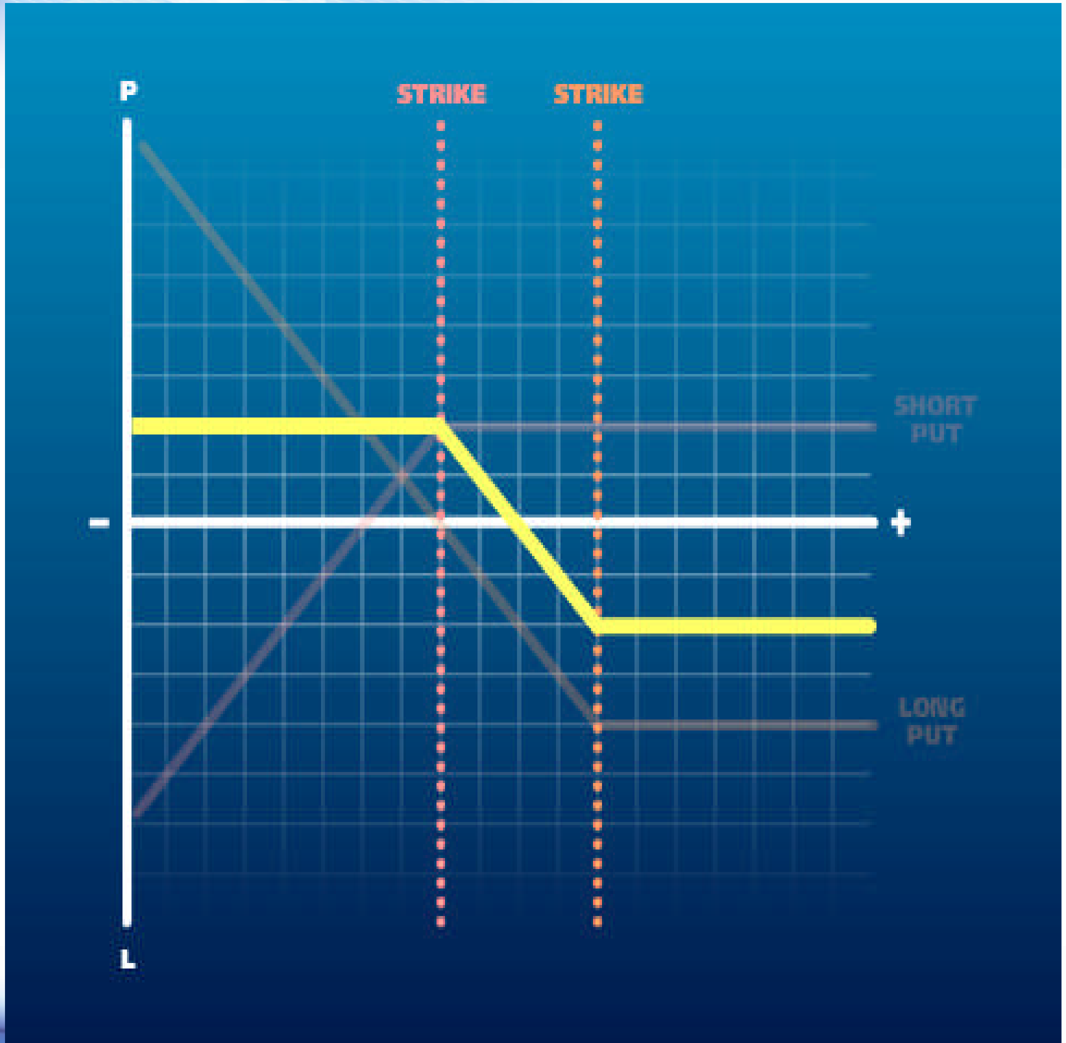
Bull Call Spread





Interactive Brokers
The Professional's Gateway to the World's Markets

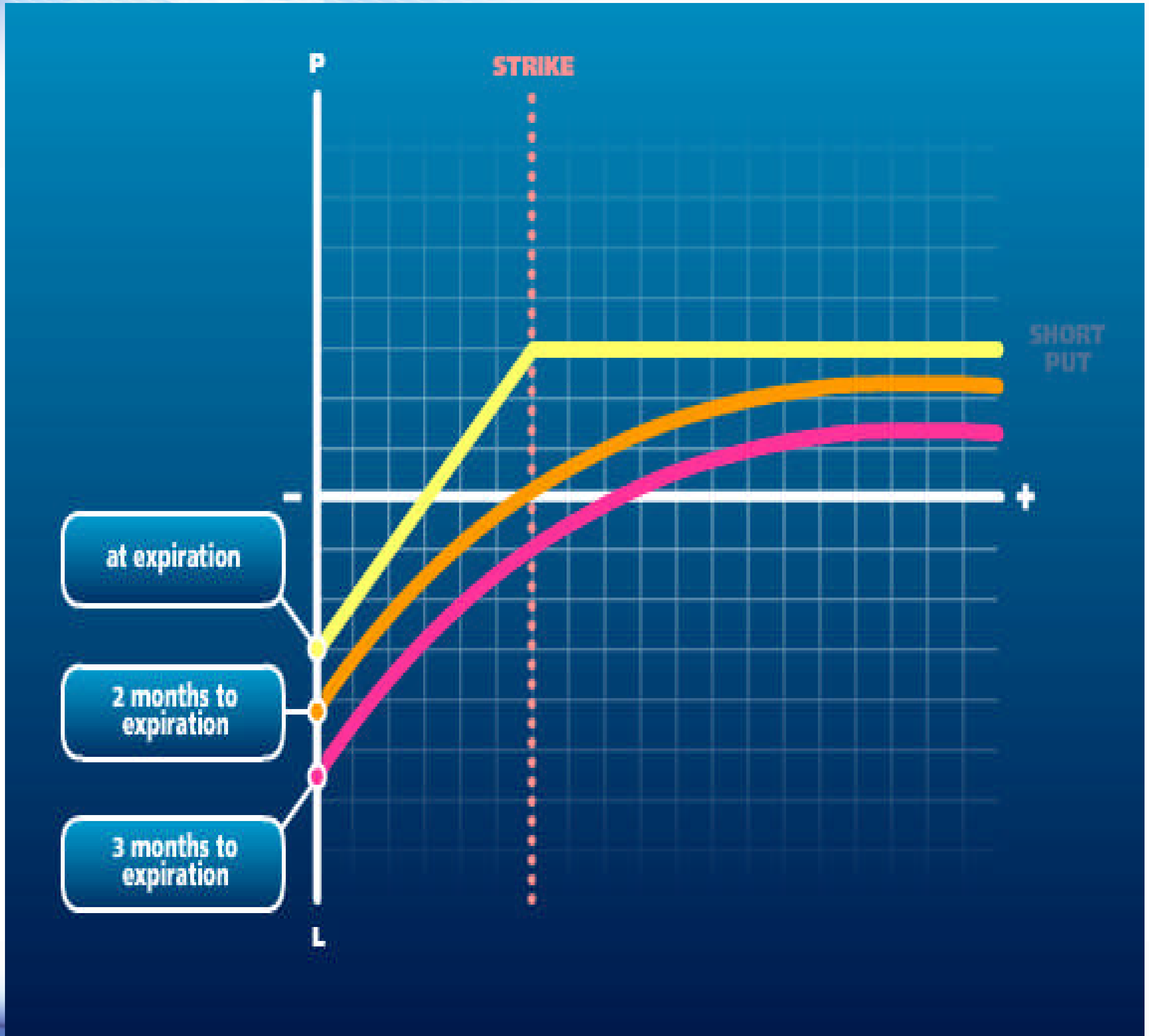
Bear Put Spread



- Seeks downside potential from stock
- Buy put, sell put
- Profits limited

Interactive Brokers
The Professional's Gateway to the World's Markets

Naked Put (Bullish)



- Investor believes that stock price will rise
- Sell put
- Stock price needs to remain above strike price to make a profit

Naked Put (Bullish)

Options Calculator

Underlying (spot) Price	23.5
Strike (exercise) Price	25
Interest Rate (in %)	2
Volatility (in %)	68
Days to expiration	7
Dividend Yield (in %)	0

Reset Calculate

	CALL	PUT
Option Price	0.35381	1.84548
Delta	0.27116	-0.72951
Gamma	0.15153	0.15182
Theta	-0.05334	-0.05208
Vega	0.01163	0.01162
Rho	0.00116	-0.00293

www.interactivebrokers.com

Options Calculator

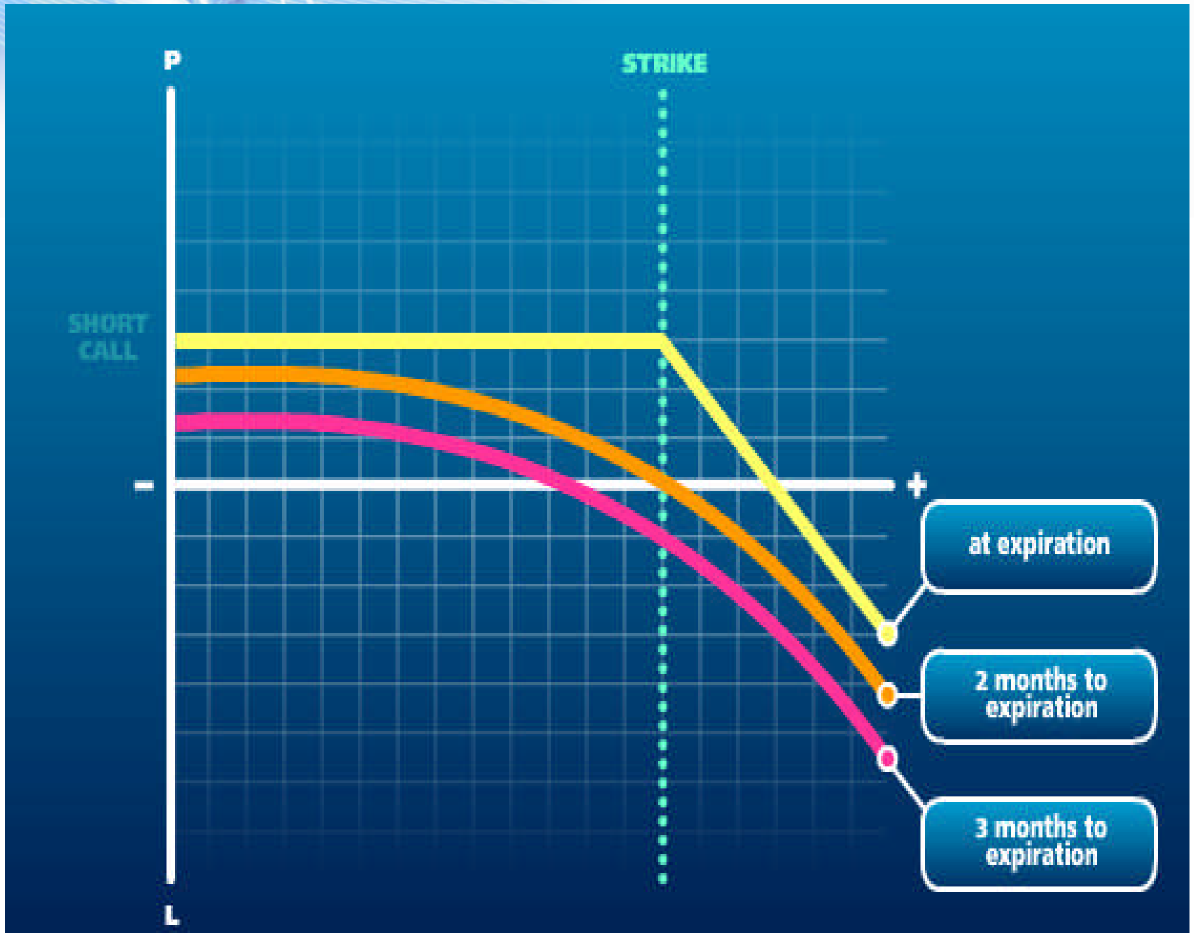
Underlying (spot) Price	23.5
Strike (exercise) Price	25
Interest Rate (in %)	2
Volatility (in %)	68
Days to expiration	37
Dividend Yield (in %)	0

Reset Calculate

	CALL	PUT
Option Price	1.44842	2.90258
Delta	0.43266	-0.56862
Gamma	0.07825	0.07857
Theta	-0.02787	-0.02662
Vega	0.03039	0.03037
Rho	0.00886	-0.01367

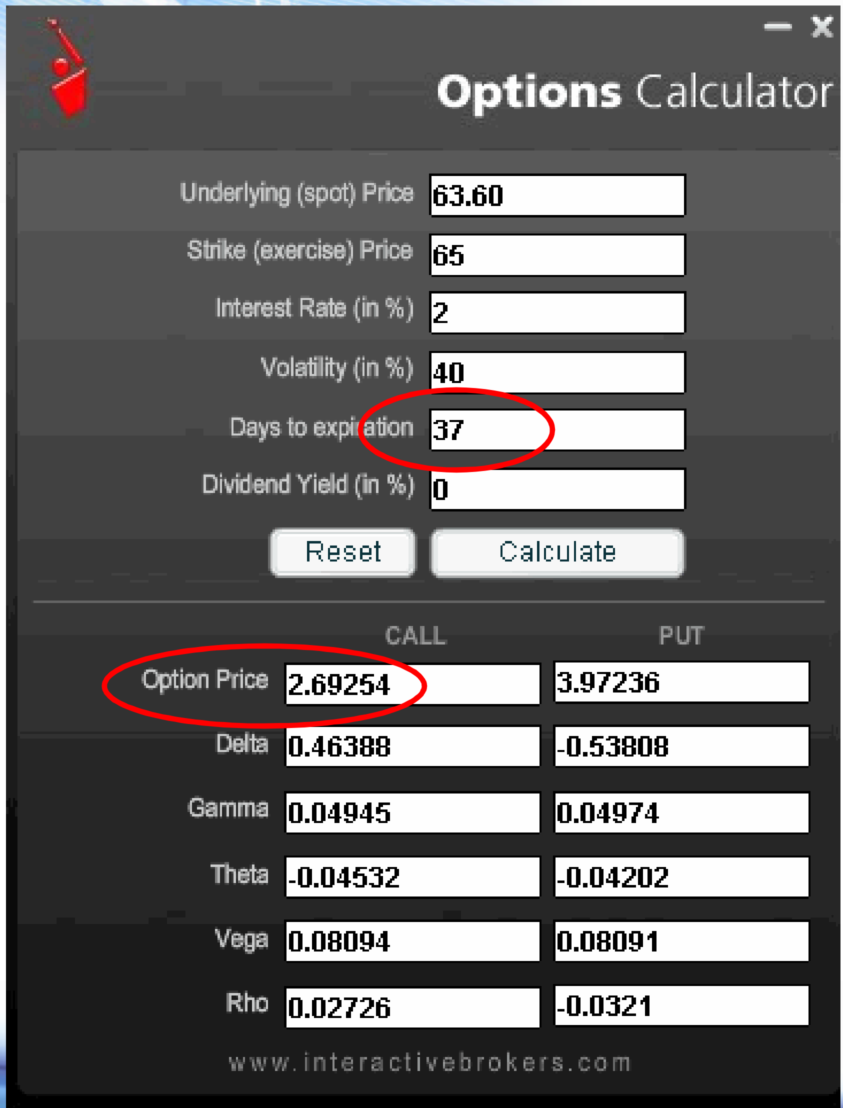
www.interactivebrokers.com

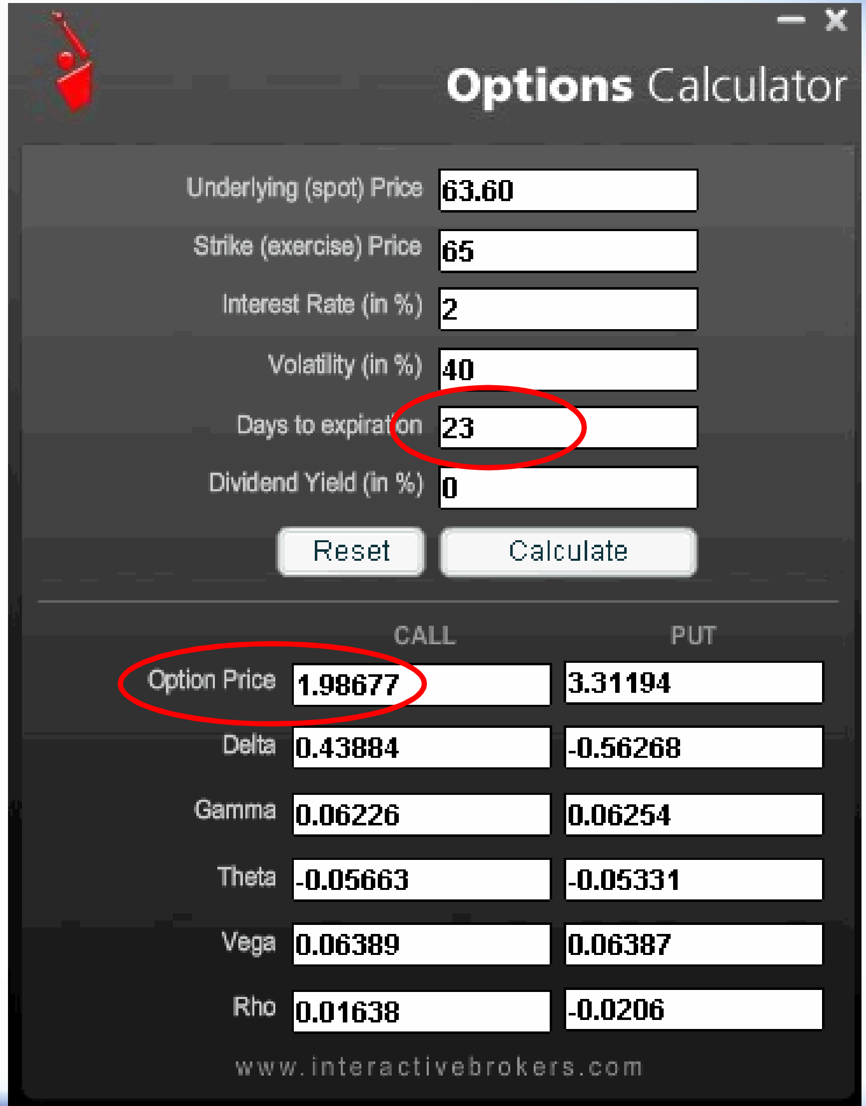
Naked Call (Bearish)



- Investor believes that stock price will fall
- Sell call
- Stock price needs to remain below strike price

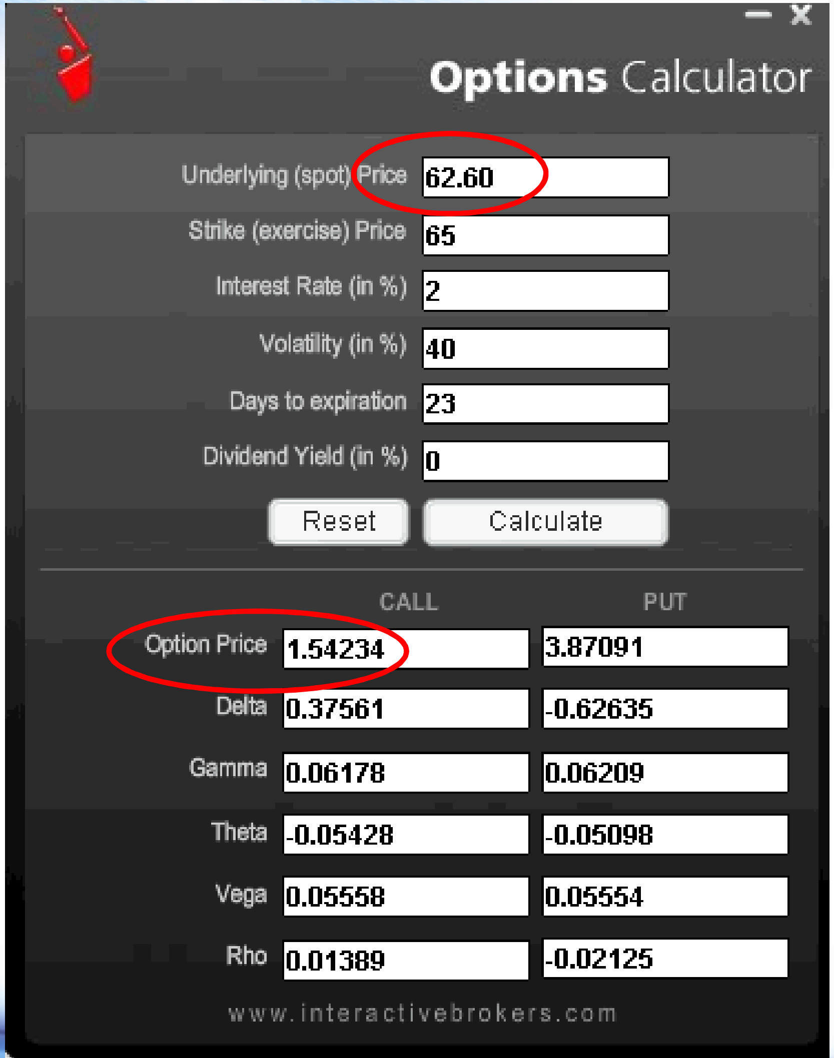
Naked Call (Bearish)

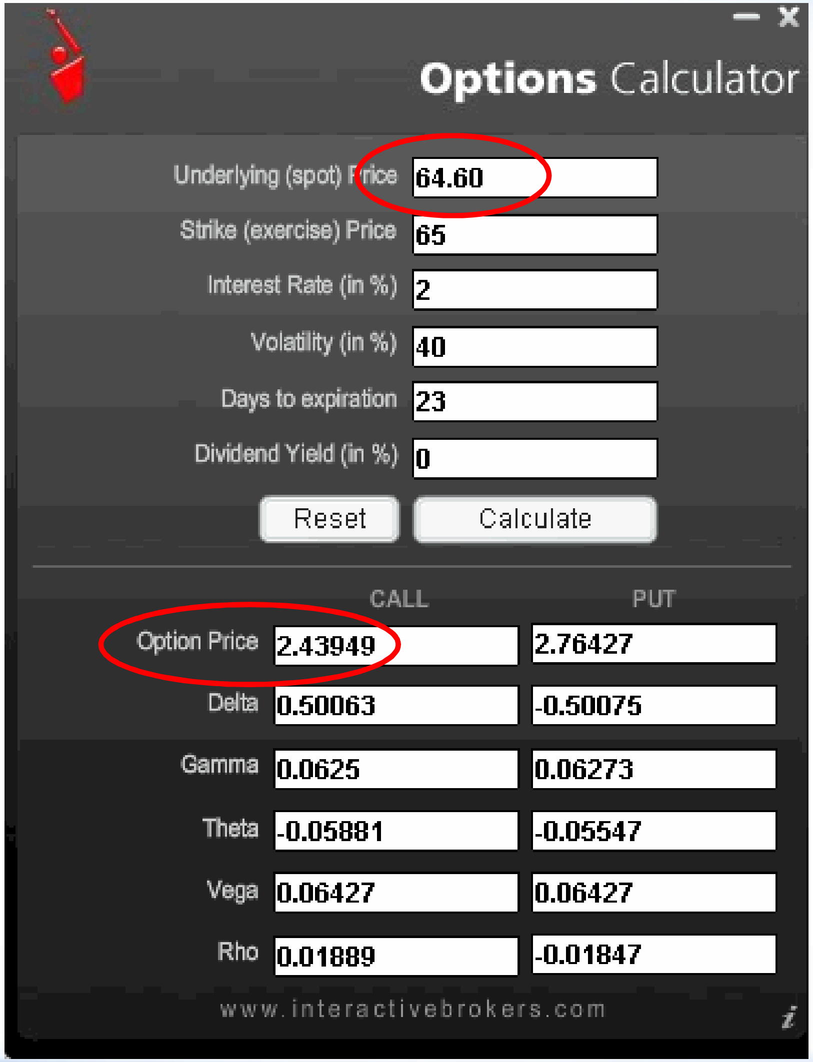




Interactive Brokers
The Professional's Gateway to the World's Markets

Naked Call (Bearish)



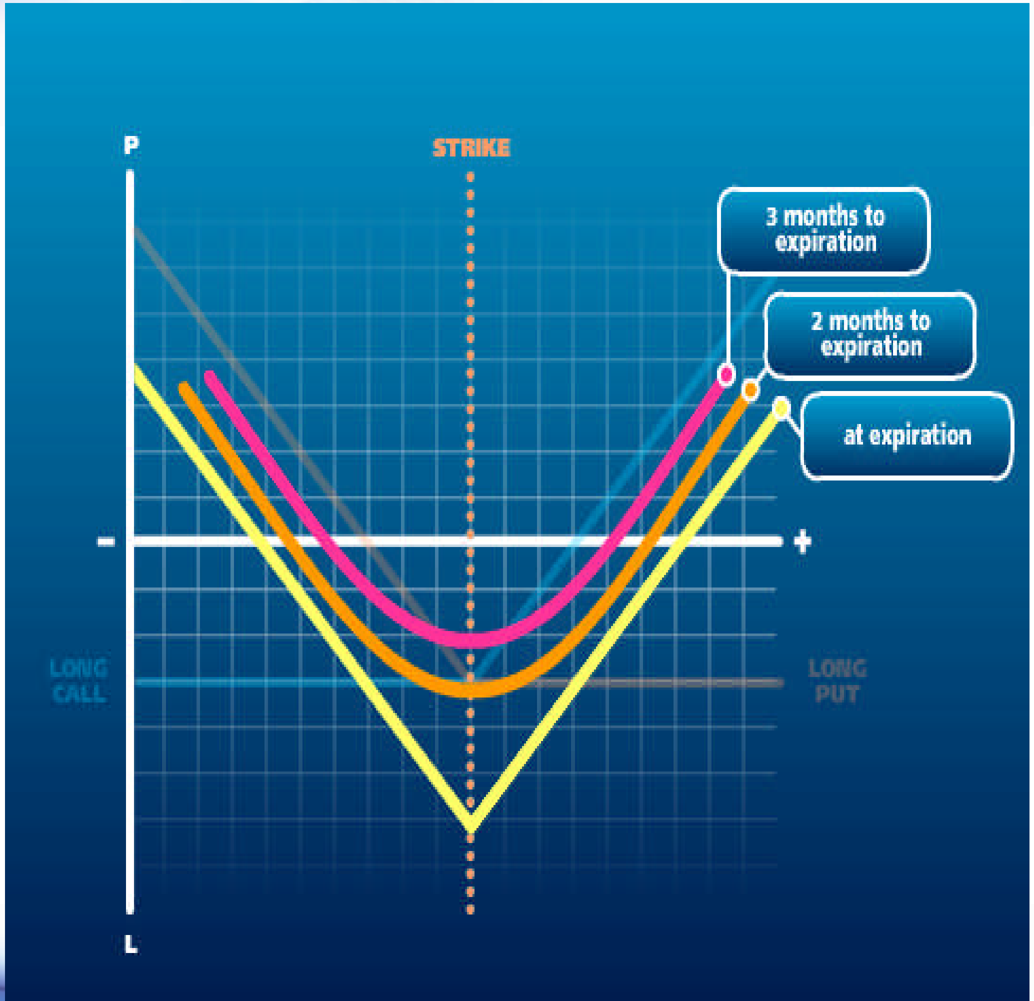


Option Implied Volatility

- ❑ Derived from pattern of trading in underlying share price
- ❑ Volatility-specific strategies
- ❑ Option Calculator may help project potential price movements

Interactive Brokers
The Professional's Gateway to the World's Markets

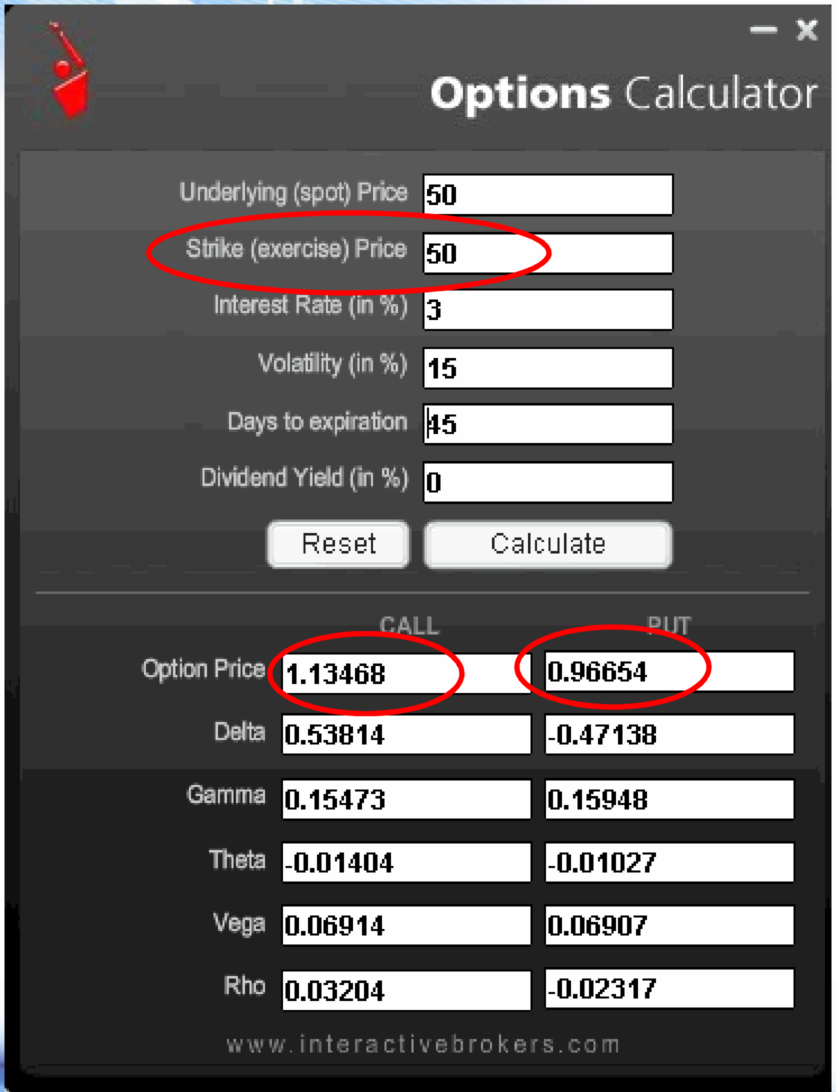
The Long Straddle



- ❑ Specific volatility play
- ❑ Long call, long put
- ❑ Payoff when underlying shifts up OR down
- ❑ Worse case occurs when prices stand still

Interactive Brokers
The Professional's Gateway to the World's Markets

The Long Straddle

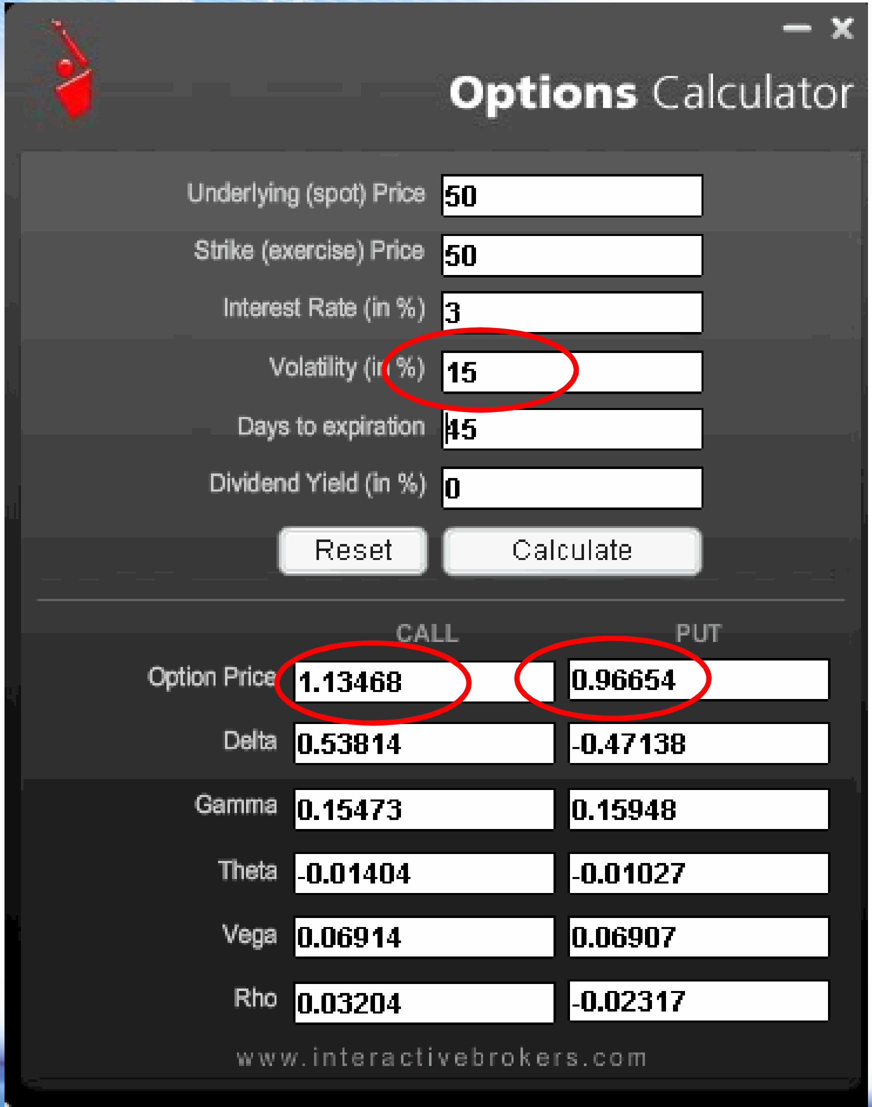


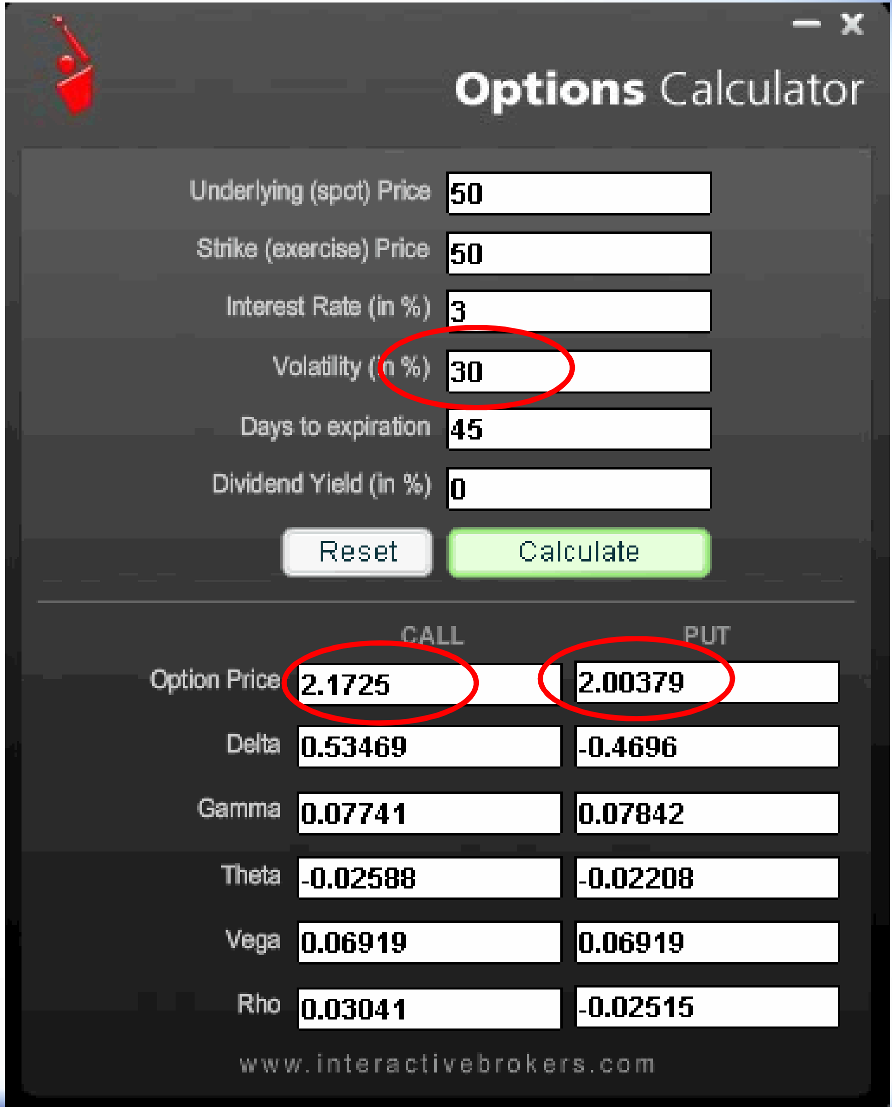
- ATM straddle at $50
- Total premium = 1.13+0.97 = 2.10
- Implied volatility = 15%

Breakevens:

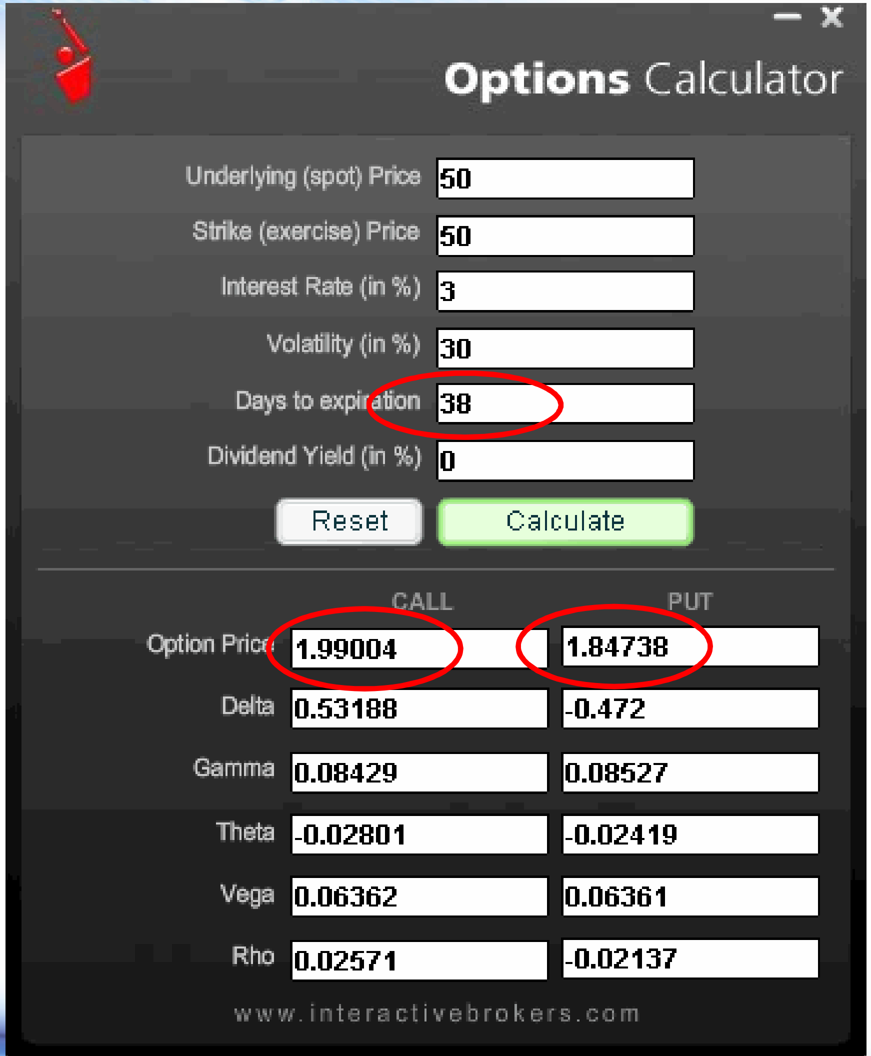
- Upside = 52.10
- Downside = 47.90

The Long Straddle



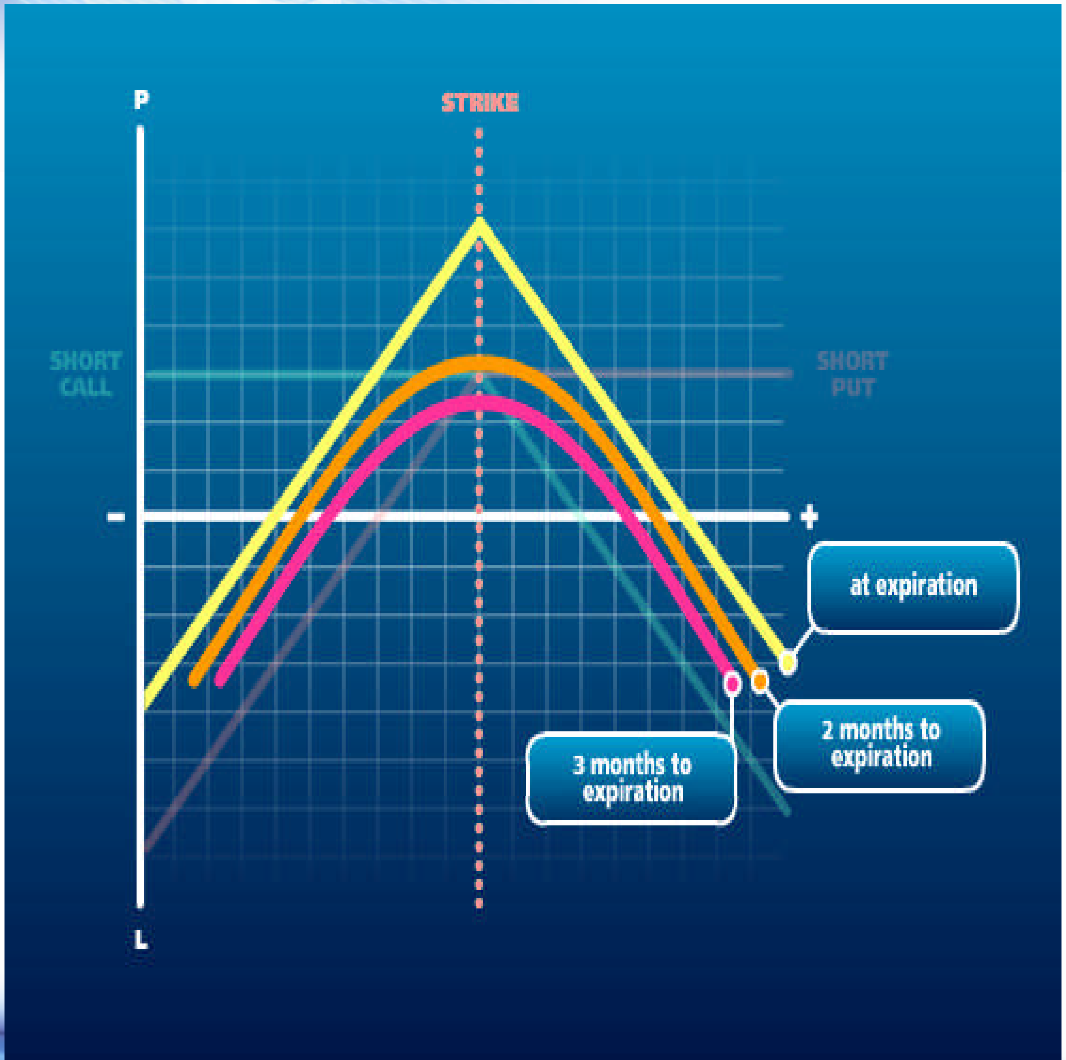


The Long Straddle



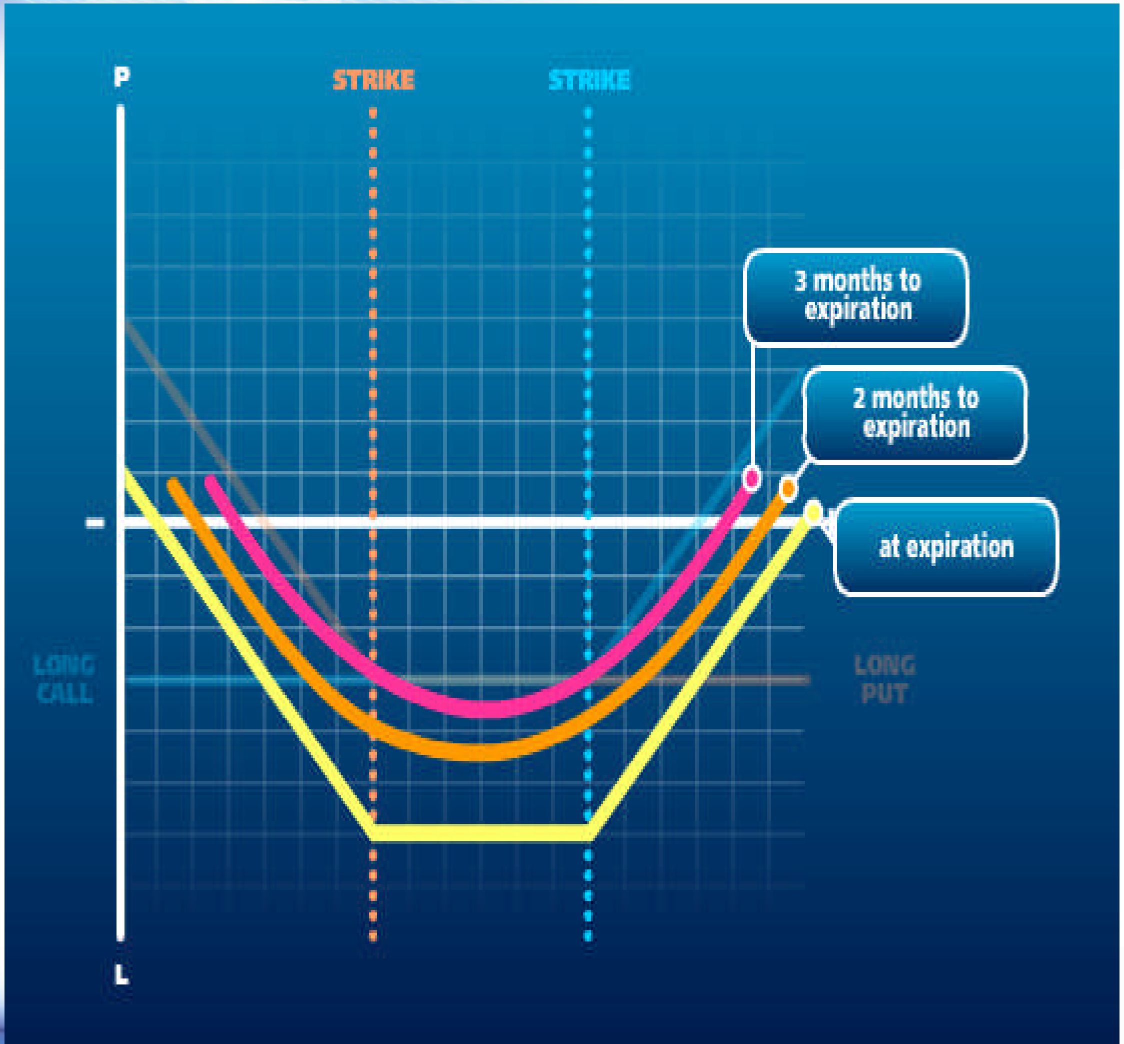
- Time declines by 1 week
- Implied volatility = 30%
- Total premium may decrease 3.84

The Short Straddle



- Specific volatility play
- Short call, short put
- Payoff when underlying price stays still
- Worse case when prices move up OR down

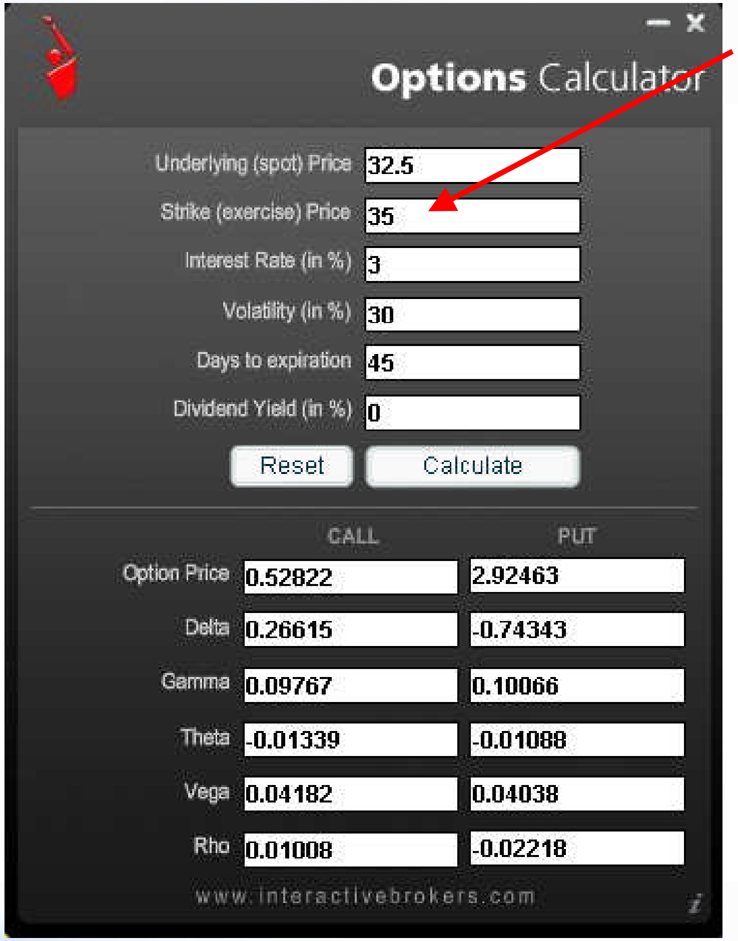
The Long Strangle



- Similar to the straddle
- Uses TWO strike prices rather than ONE
- Lower cost
- Lower potential reward

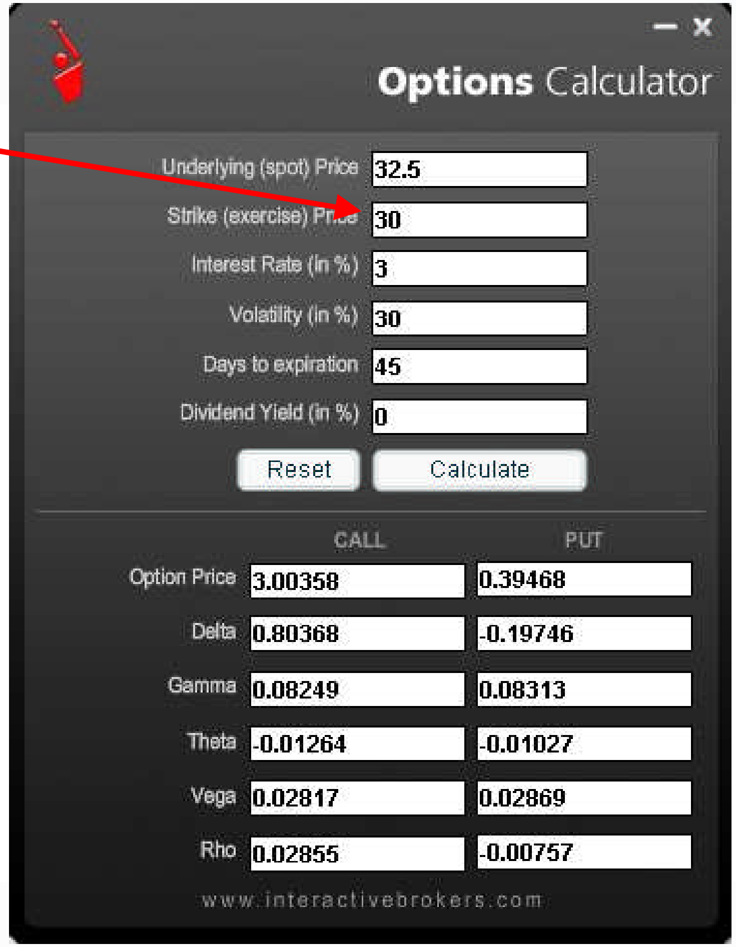
Interactive Brokers
The Professional's Gateway to the World's Markets

The Long Strangle

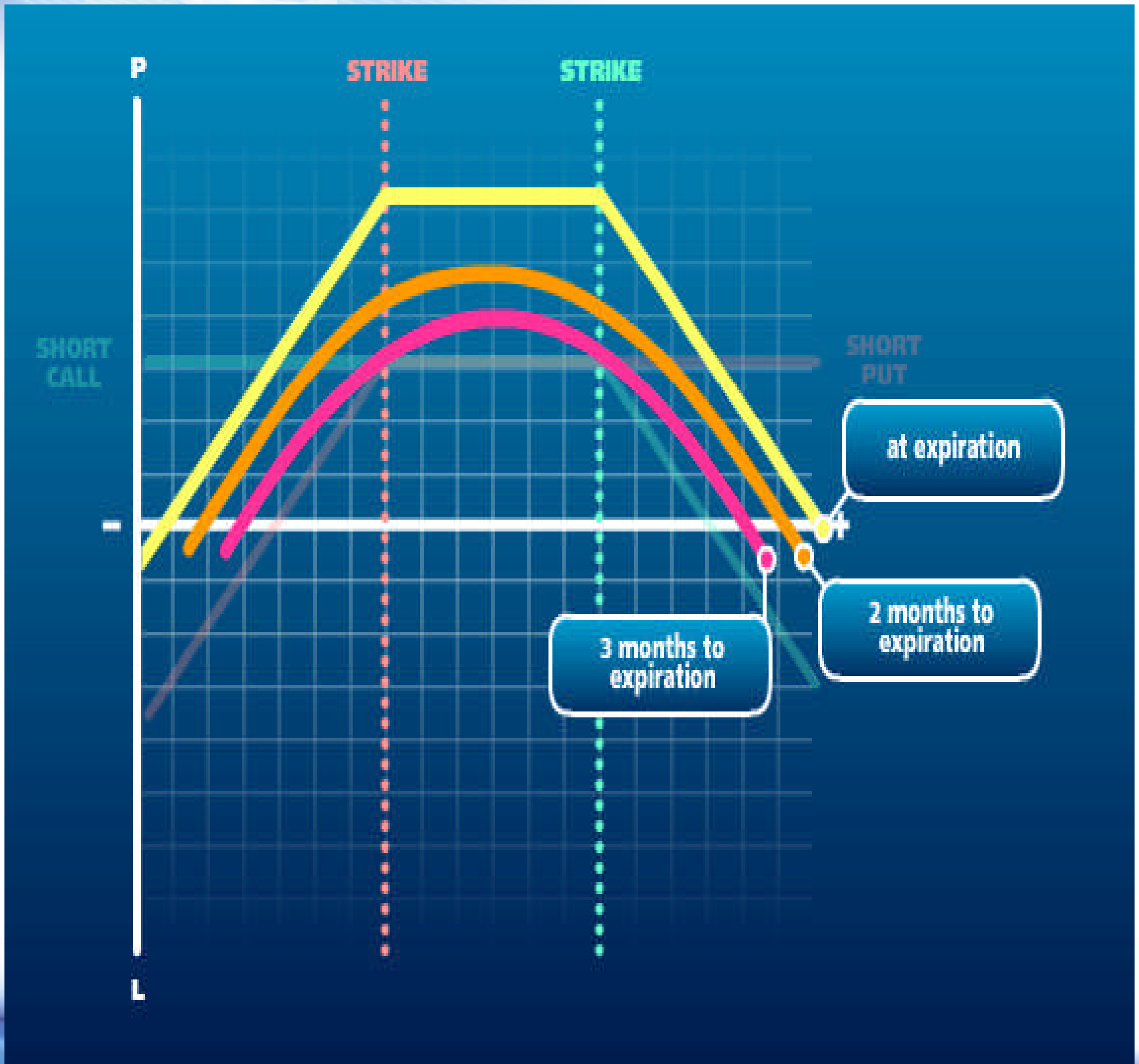


Higher strike call

Lower strike put



The Short Strangle



- Generates premiums
- Limited reward
- Risk of substantial losses outside of trade breakevens

Conclusion

- Options have many variables to consider
- IB Option Calculator projects theoretical outcomes
- Be aware of volatility and time value
- See more at:

http://individuals.interactivebrokers.com/en/general/education/TradersUniversity.php?ib_entity=llc