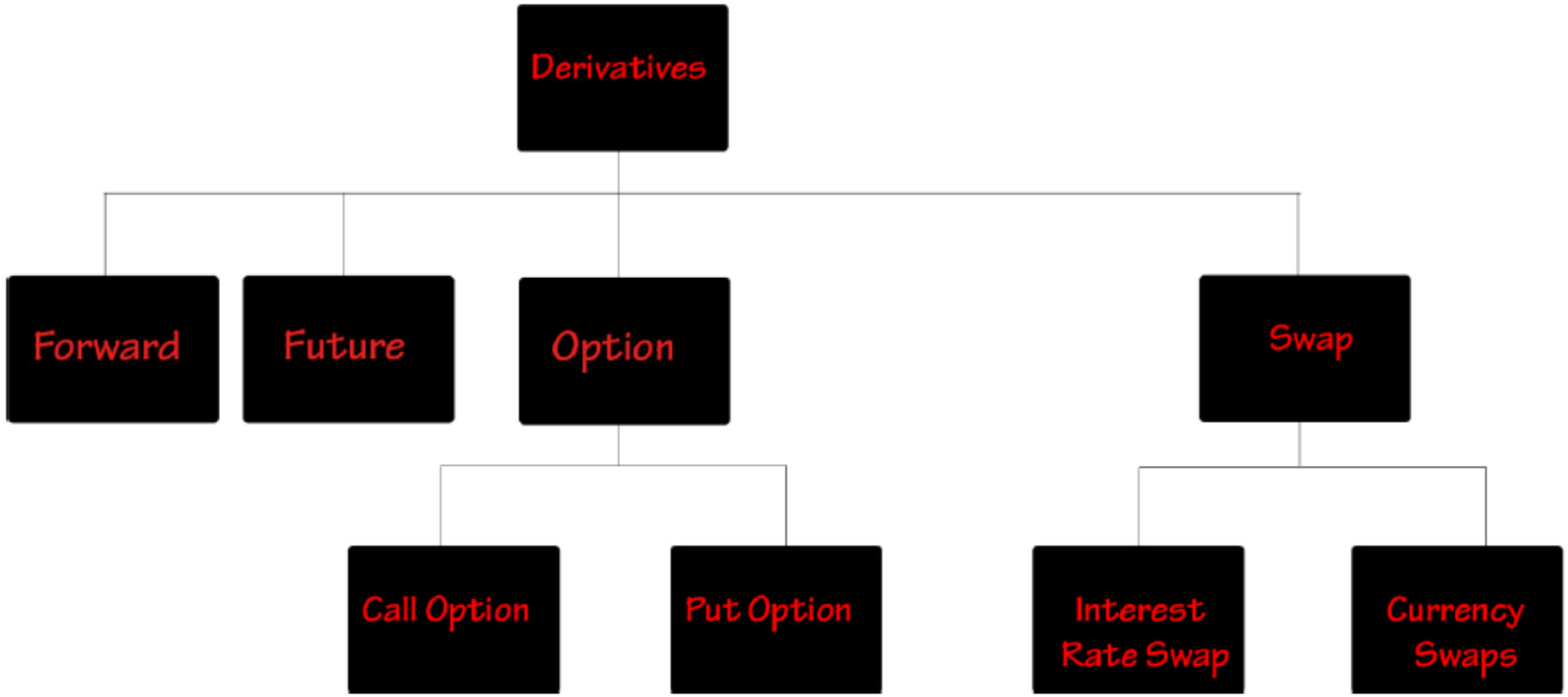
# TYPES OF DERIVATIVE



# WHAT IS OPTION

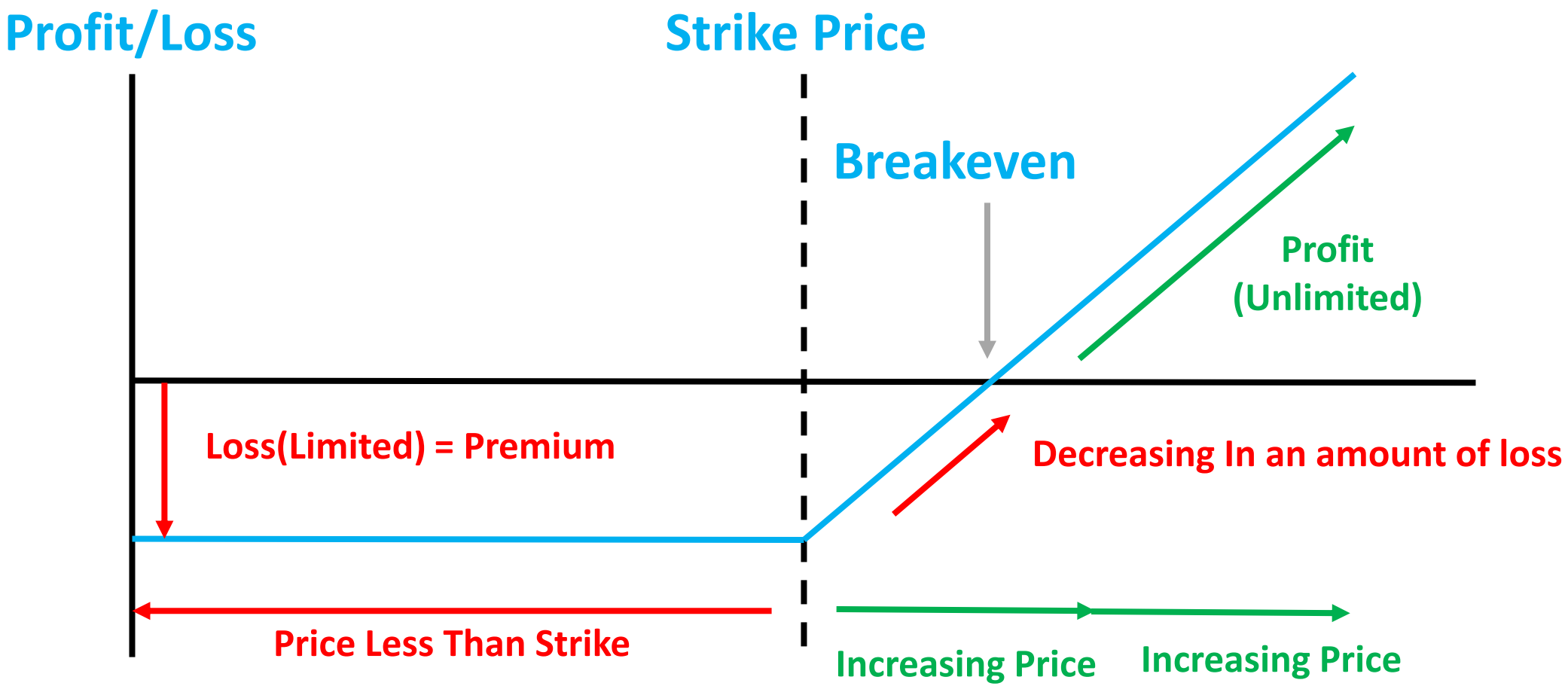
**An option is a contract between two parties where one party gives to the other the right. But not the agreed price. In return for giving the right, the party giving the right to collects payment from the other party.**
**This payment collected is called the “premium” or price of the option**

# WHAT IS CALL OPTION

- **Call Buyer have-**
  - **The right to Buy a stock.**
  - **At a certain price by a certain time.**
  - **For this RIGHT, they pay PREMIUM**
- **Call Sellers have-**
  - **The obligation to sell a stock.**
  - **At a certain price by a certain time.**
  - **For the obligation, they Receive a PREMIUM**

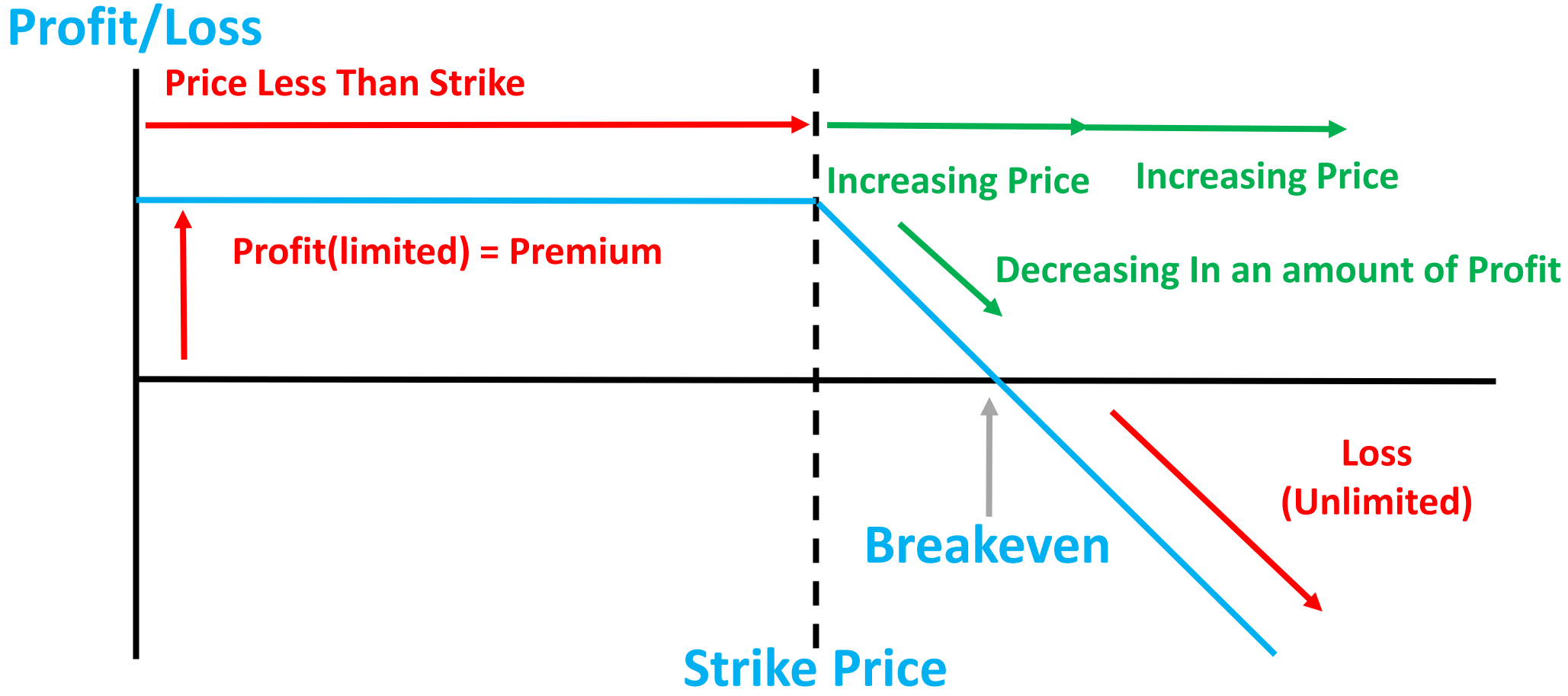
# PAY OFF DIAGRAM

## CALL OPTION BUY



# PAY OFF DIAGRAM

## CALL OPTION SELL



# WHAT IS BREAKEVEN

**Call Buy Breakeven = Strike + Premium**

**Call Sell Breakeven = Strike + Premium**

# PUT

- **Put Buyer have-**
  - The right to Sell a stock.
  - At a certain price by a certain time.
  - For this RIGHT, they pay PREMIUM
- **Put Sellers have-**
  - The obligation to Buy a stock.
  - At a certain price by a certain time.
  - For the obligation, they Receive a PREMIUM

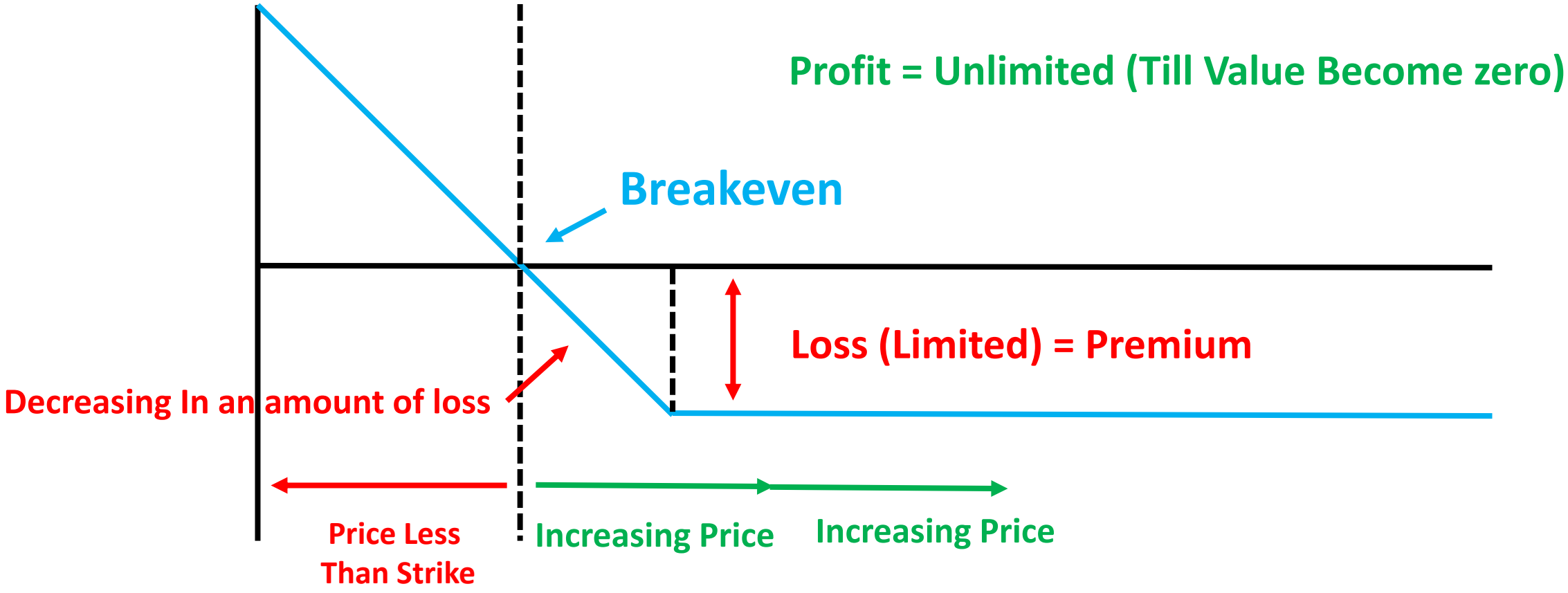
# WHAT IS BREAKEVEN

**Breakeven of put = strike- premium**

**Breakeven of put sell = strike-premium**

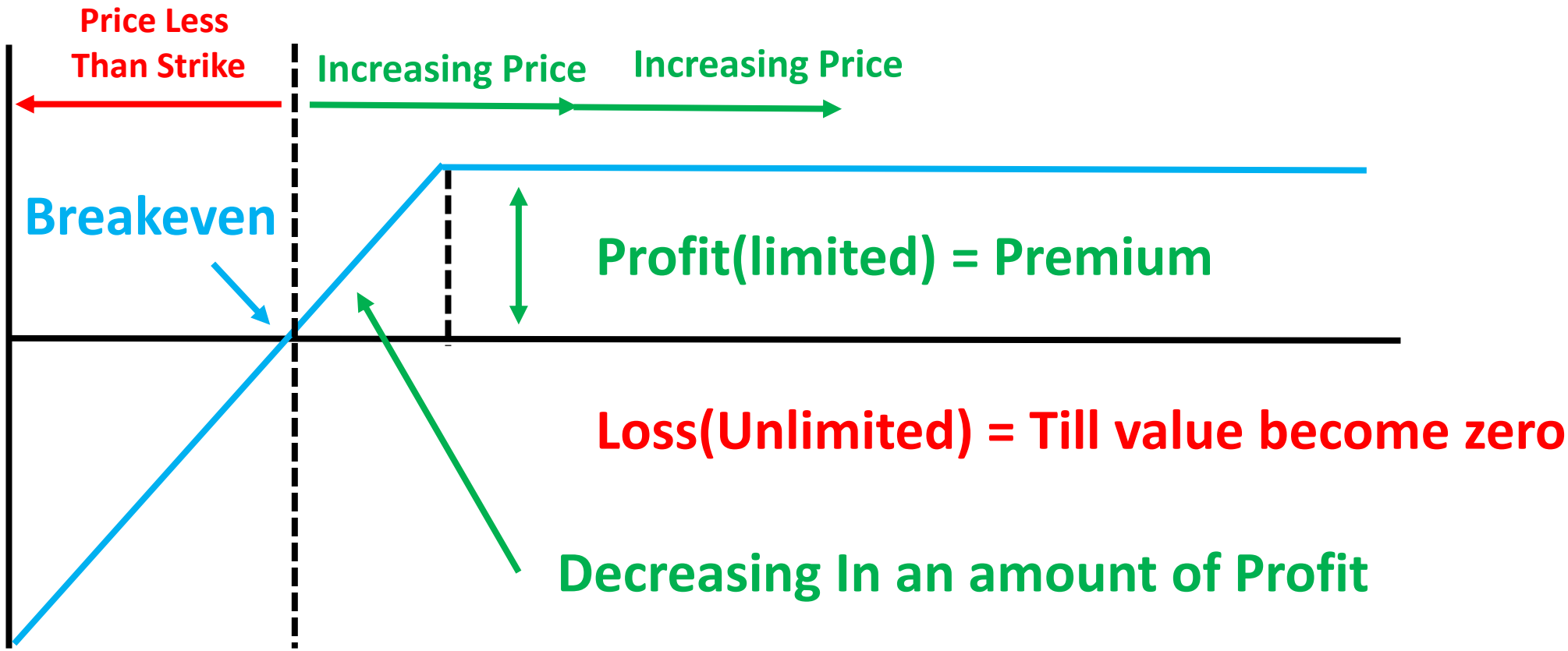
# PAY OFF DIAGRAM

## PUT OPTION BUY



# PAY OFF DIAGRAM

## PUT OPTION SELL



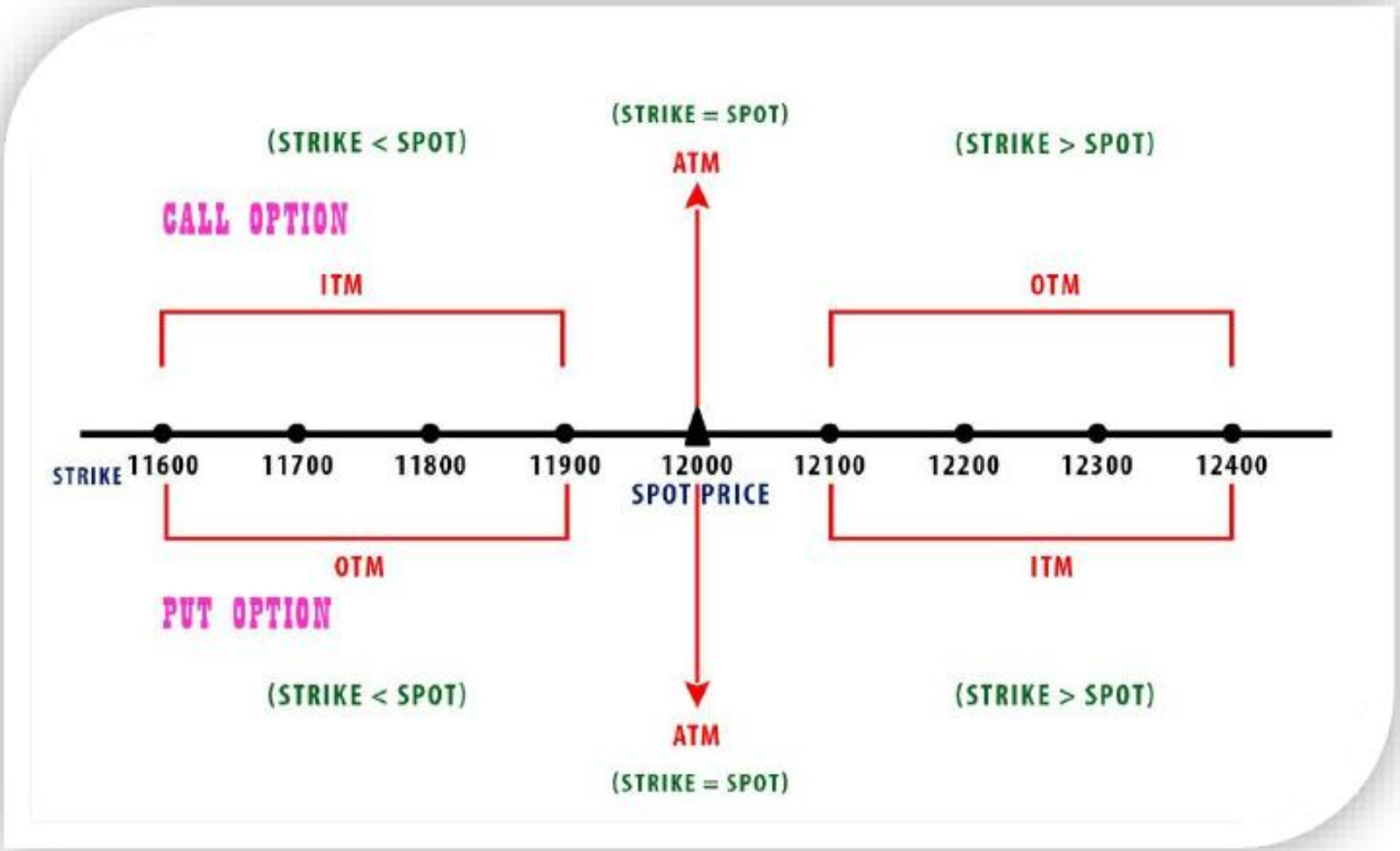
# TYPES OF CALL AND PUT OPTION

**ITM :- In The Money**

**OTM :- Out Of The Money**

**ATM :- At The Money**

# ITM – OTM - ATM


(STRIKE = SPOT)
(STRIKE < SPOT)
ATM
(STRIKE > SPOT)
CALL OPTION
ITM
OTM
STRIKE
11600
11700
11800
11900
12000
12100
12200
12300
12400
SPOT PRICE
OTM
ITM
PUT OPTION
(STRIKE < SPOT)
(STRIKE > SPOT)
ATM
(STRIKE = SPOT)

# INTRINSIC AND TIME VALUE

**ITM :- Intrinsic + Time Value**

**OTM :- Time Value**

**ATM :- Time Value**

# EXAMPLES

**SPOT = 11500**

**STRIKE 11300 – Premium – 250 (ITM)**

**11500 – Premium – 70 (ATM)**

**11700 – Premium – 30 (OTM)**

# EXAMPLES

## PREMIUM = INTRINSIC + TIME VALUE

| | | | |
|---|---|---|---|
| 11300 = | 200 | + | 50 |
| 11500 = | 0 | + | 70 |
| 11700 = | 0 | + | 30 |

# FORMULA FOR CALCULATION OF OPTION

| | ABOVE STRIKE | BELOW/EQUAL STRIKE |
|---|---|---|
| CALL BUY | Amount Received (SPOT – STRIKE)<br>–<br>AMOUNT PAID (PREMIUM) | Entire Premium Loss |
| CALL SELL | Amount Received (Premium)<br>-<br>AMOUNT PAID ( SPOT – STRIKE) | Entire Premium Profit |

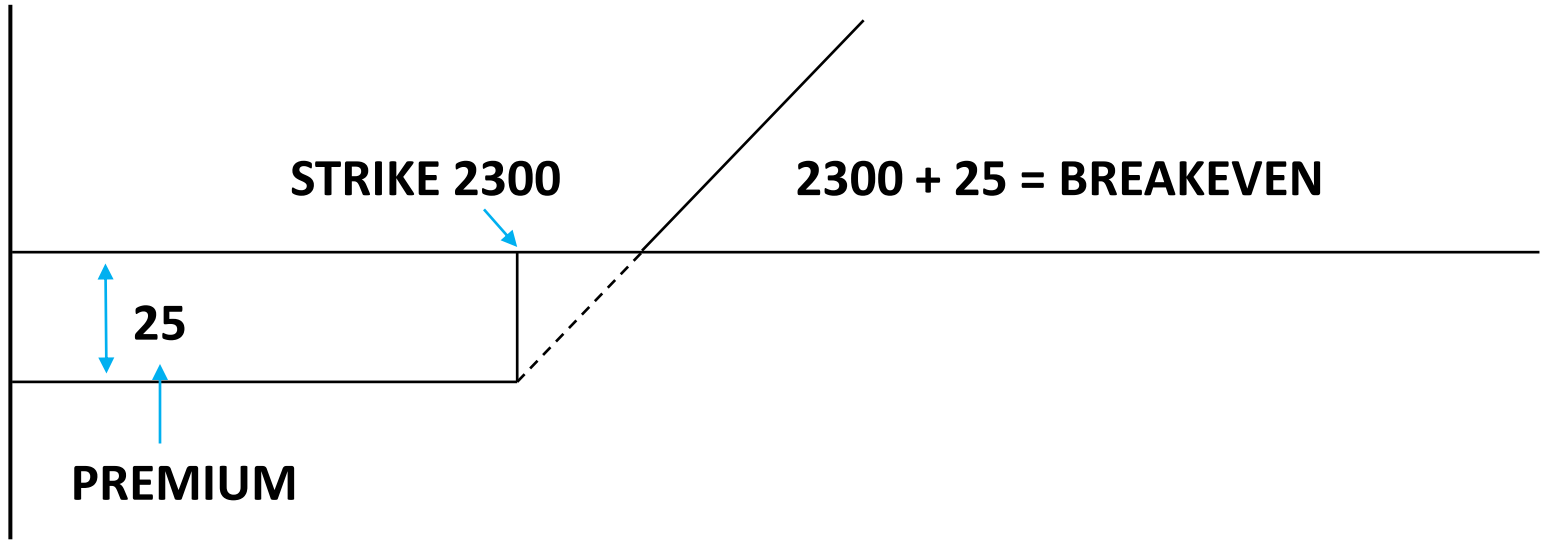
# FORMULA FOR CALCULATION OF OPTION

| | ABOVE/EQUAL STRIKE | BELOW STRIKE |
|---|---|---|
| PUT BUY | Entire Premium Loss | Amount Received (STRIKE – SPOT)<br>-<br>AMOUNT PAID (PREMIUM) |
| PUT SELL | Entire Premium Profit | Amount Received (PRMIUM)<br>-<br>AMOUNT PAID (STRIKE - SPOT) |

# EXAMPLES

## CALCULATE PROFIT AND LOSS FOR

**RELIANCE CALL BUY @25 IF EXPIRY CLOSING @2200,2300,2325,2400**



# EXAMPLES

## CALCULATE PROFIT AND LOSS FOR

### RELIANCE CALL BUY @25 IF EXPIRY CLOSING @2200,2300,2325,2400

| CALL BUY | ABOVE STRIKE<br>Amount Received (SPOT – STRIKE) - AMOUNT PAID (PREMIUM) | BELOW/EQUAL STRIKE<br>Entire Premium Loss |
|---|---|---|
| 2200(BELOW STRIKE) | | -25 |
| 2300 (EQUAL STRIKE) | | -25 |
| 2325 (ABOVE STRIKE) | 2325 – 2300 = 25 – 25 = 0 | |
| 2400 (ABOVE STRIKE) | 2400 – 2300 - 25 = 100-25 = 75 | |

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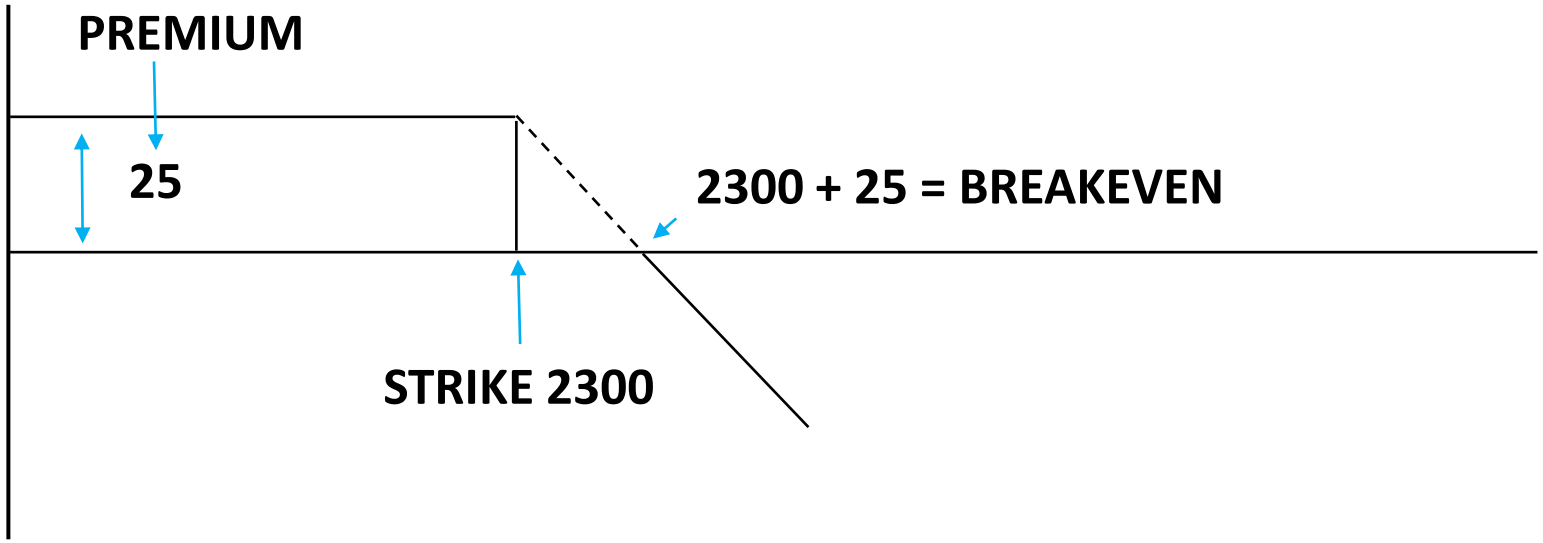
# EXAMPLES

## CALCULATE PROFIT AND LOSS FOR

**RELIANCE CALL STRIKE 2300 IS SELL @ 25 FIND PROFIT/LOSS @ 2200,2300,2325,2400**



# EXAMPLES

## CALCULATE PROFIT AND LOSS FOR

### RELIANCE CALL SELL @25 IF EXPIRY CLOSING @2200,2300,2325,2400

| CALL SELL | ABOVE STRIKE<br>Amount Received (Premium) - AMOUNT PAID ( SPOT – STRIKE) | BELOW/EQUAL STRIKE<br>Entire Premium Profit |
|---|---|---|
| 2200(BELOW STRIKE) | | +25 |
| 2300 (EQUAL STRIKE) | | +25 |
| 2325 (ABOVE STRIKE) | 25 – (2325 – 2300) = 25-25=0 | |
| 2400 (ABOVE STRIKE) | 25- (2400 – 2300) = 25-100 = -75 | |

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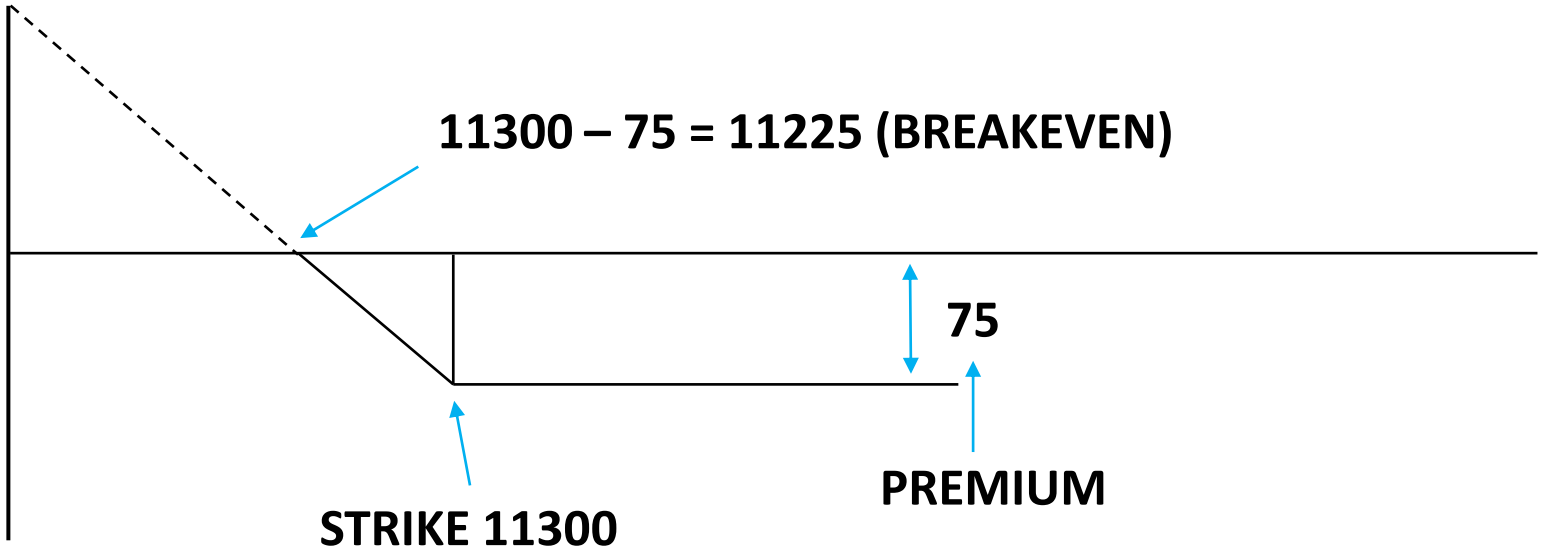
# EXAMPLES

## CALCULATE PROFIT AND LOSS FOR

**NIFTY PUT STRIKE – 11300 BUY @75 FIND PROFIT/LOSS @ 11400,11200,11300,11225**

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# EXAMPLES

## CALCULATE PROFIT AND LOSS FOR

### NIFTY PUT BUY @75 IF EXPIRY CLOSING @11400,11200,11300,11225

| PUT BUY | ABOVE STRIKE/EQUAL STRIKE<br>Entire Premium Loss | BELOW STRIKE<br>Amount Received (STRIKE – SPOT) - AMOUNT PAID (PREMIUM) |
|---|---|---|
| 11400(ABOVE STRIKE) | -75 | |
| 11200 (BELOW STRIKE) | | (11300-11200) = 100-75 = 25 |
| 11300 (EQUAL STRIKE) | -75 | |
| 11225 (BELOW STRIKE) | | (11300-11225) -75 = 75-75 = 0 |

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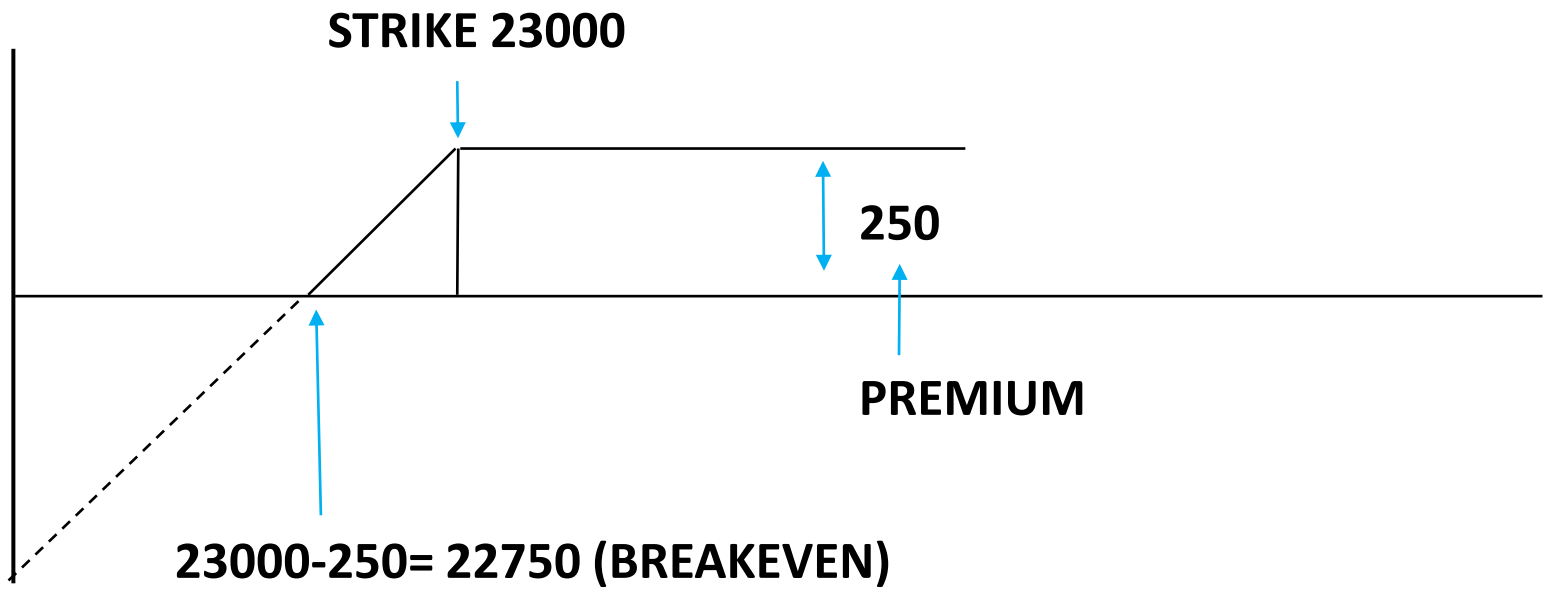
# EXAMPLES

## CALCULATE PROFIT AND LOSS FOR

**BANKNIFTY PUT SELL STRIKE – 23000 @250 FIND PROFIT/LOSS @ 23000,23500,22500,22000**

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# EXAMPLES

## CALCULATE PROFIT AND LOSS FOR

**BANKNIFTY PUT SELL STRIKE – 2300 @-250 FIND PROFIT/LOSS @23000,23500,22500,22000**

| PUT SELL | ABOVE/EQUAL STRIKE<br>Entire Premium Profit | BELOW STRIKE<br>Amount Received (PRMIUM) - AMOUNT PAID (STRIKE - SPOT) |
|---|---|---|
| 23000(EQUAL STRIKE) | 250 | |
| 23500 (ABOVE STRIKE) | 250 | |
| 22500 (BELOW STRIKE) | | 250 – (23000-22500) = 250-500 = -250 |
| 22000 (BELOW STRIKE) | | 250 – (23000-22000 = 7000) = 250 – 1000 = -750 |

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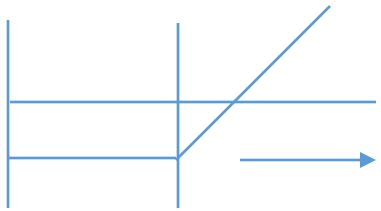
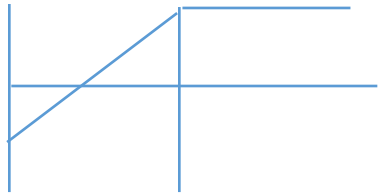
# OUTLOOK

| | CALL | PUT |
|---|---|---|
| BUY (+) | BULLISH | BEARISH |
| SELL (-) | BEARISH | BULLISH |

# DIFFRENCE BETWEEN

| CALL BUY | PUT SELL |
| --- | --- |
| BULLISH | BULLISH |
|  |  |
| PREMIUM PAY | PREMIUM RECIEVED |
| LIMITED LOSS / UNLIMITED PROFIT | UNLIMITED LOSS / LIMITED PROFIT |
| LOW PROBABILITY OF WIN | CONSISTENT INCOME |

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# OPTIONS TERMINOLOGIES

## SPOT PRICE

**Spot price is the current price at which a particular underlying can be bought or sold at a specified time and place.**

# OPTIONS TERMINOLOGIES

## STRIKE PRICE

**Strike price is the price at which a specific derivative contract can be exercised. Strike prices are mostly used to describe stock and index options, in which strike prices arc fixed in the contract, for call option. Strike price is the price at which underlying can be bought, while for put options the strike price is the price at which underlying can be sold.**

**The fixed price at which the owner of art Option can purchase (in the case of a call), or sell (in the case of a put) the underlying. It's the price at which the stock will be bought or sold the option exercised, the strike price is often called the exercise price.**

# OPTIONS TERMINOLOGIES

## MATURITY DATE

**The date on which all open future and option of that series gets settled.**

# OPTIONS TERMINOLOGIES

## PREMIUM

**The total cost of option. This is the amount which option buyer pays to the Option Seller. The Premium of an option is basically the sum of the option's intrinsic and time value.**

# OPTIONS TERMINOLOGIES

## INTRINSIC VALUE

**Intrinsic value refers to the value of a security which contained ¡n the security itself is also frequently is called fundamental value. It is ordinarily calculated by summing the future income generated by the asset, and discounting it to the present value.**
**An option is said to have intrinsic value if the option is in-the-money.**
**When out-of-money, its intrinsic value is zero.**

# OPTIONS TERMINOLOGIES

## TIME VALUE (Time value = Option Value - Intrinsic Value. )

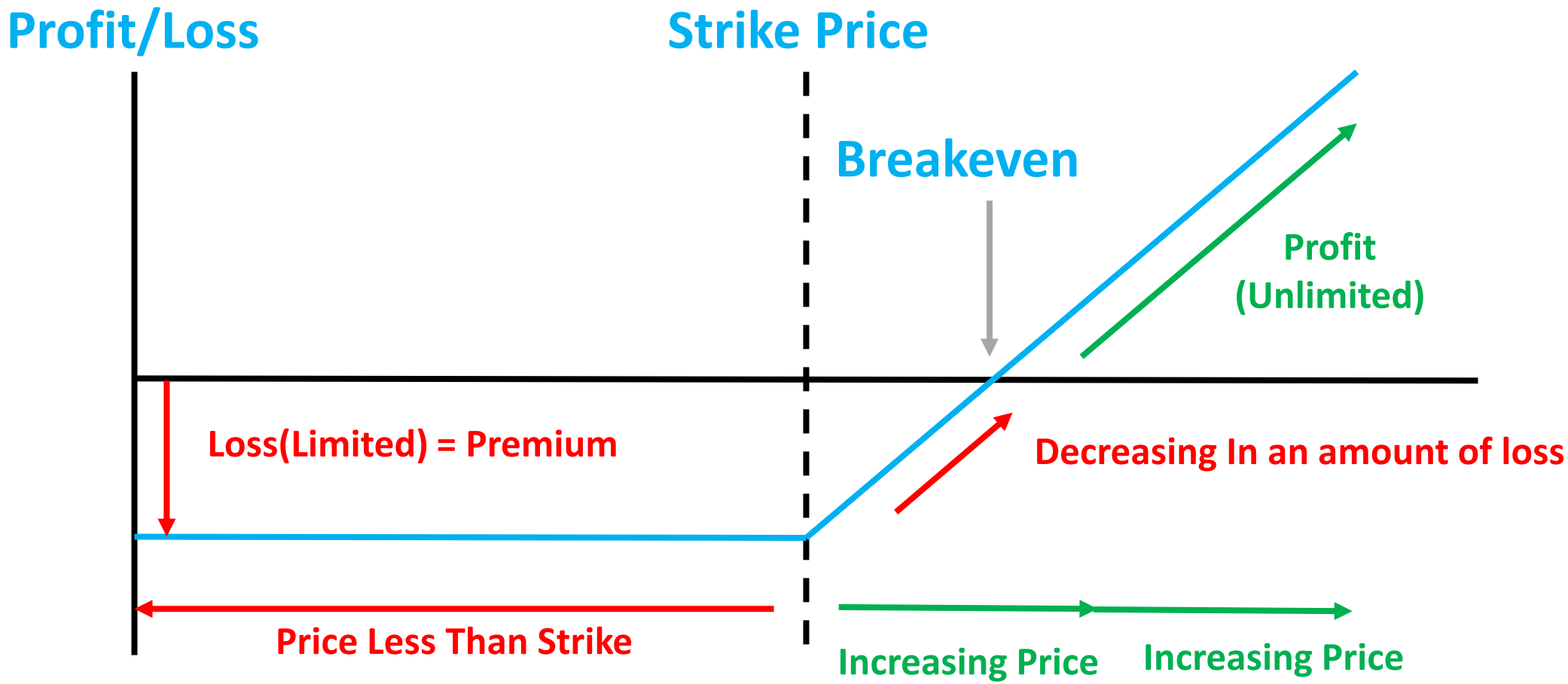
**More specifically, an options time value reflects the probability that (the option will gain its intrinsic value, become profitable to exercise before it expires this value depends upon the time period left for expiry and the volatility of the underlying instrument's price. The time value of an option is not negative because the option value is never lower than the intrinsic value, and converges towards zero with Time.**

# STRATEGY

## LONG CALL

| Market scenario | Bullish on market and bullish on volatility |
|---|---|
| Risk | Limited |
| Reward | Unlimited |
| BEP | Call strike + premium |

# STRATEGY LONG CALL

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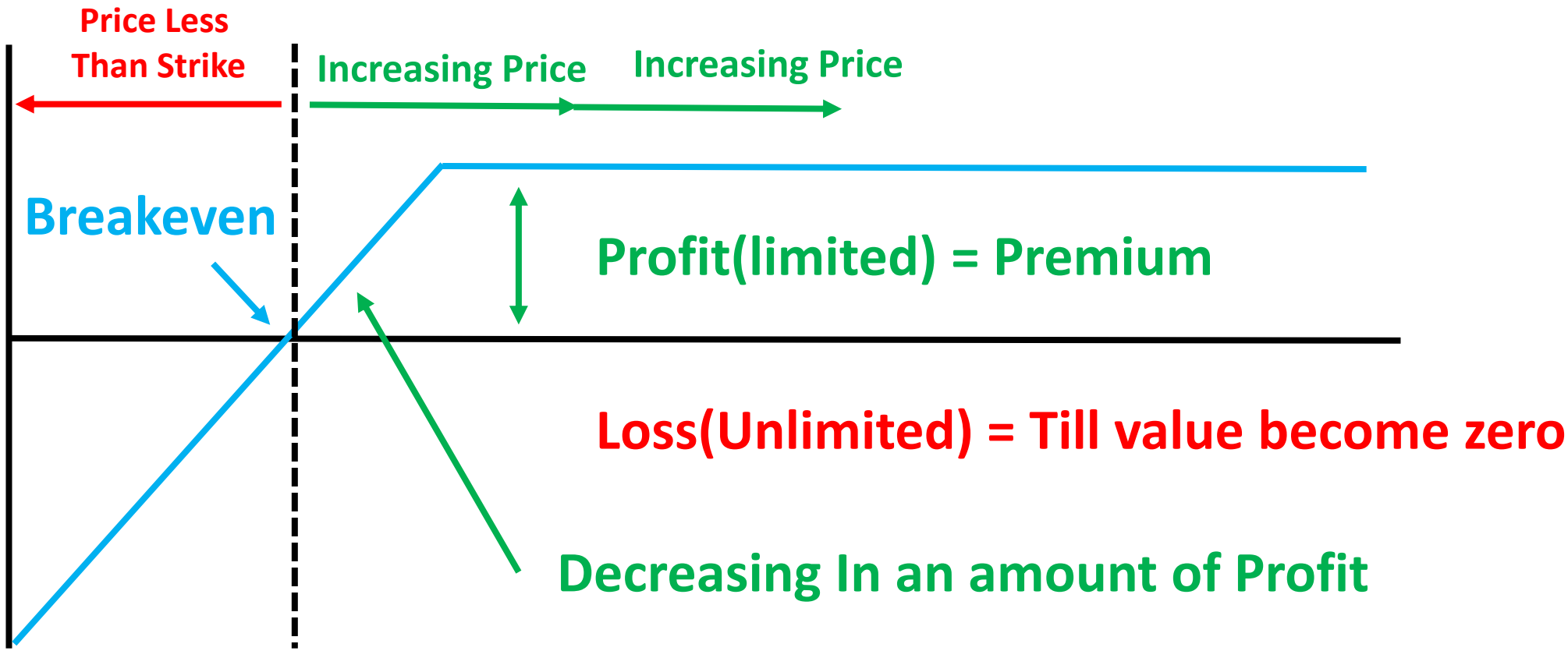
# STRATEGY

## SHORT PUT

| Market scenario | Bullish on market and bearish on volatility |
|---|---|
| Risk | Unlimited |
| Reward | Limited to premium |
| BEP | strike - premium |

# STRATEGY

## SHORT PUT

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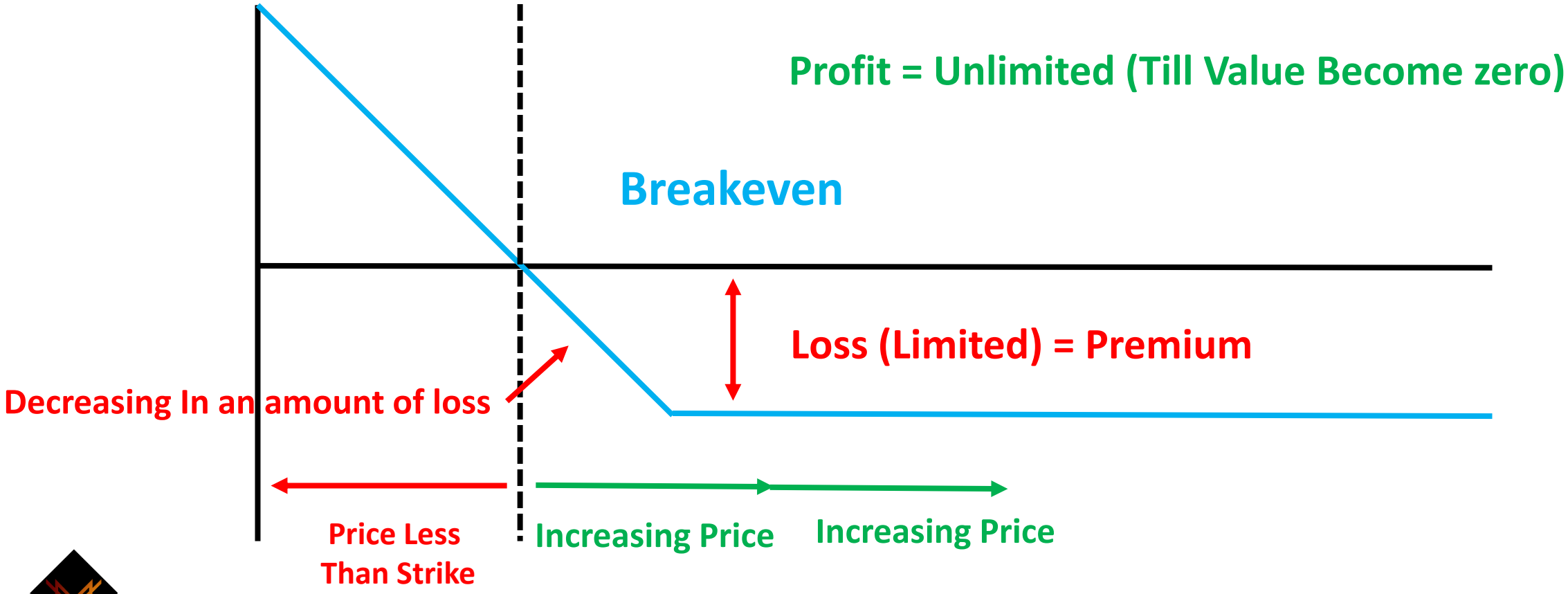
# STRATEGY

## LONG PUT

| Market scenario | BEARISH on market and Bullish on volatility |
|---|---|
| Risk | Limited to premium |
| Reward | Unlimited |
| BEP | strike - premium |

# STRATEGY

## LONG PUT

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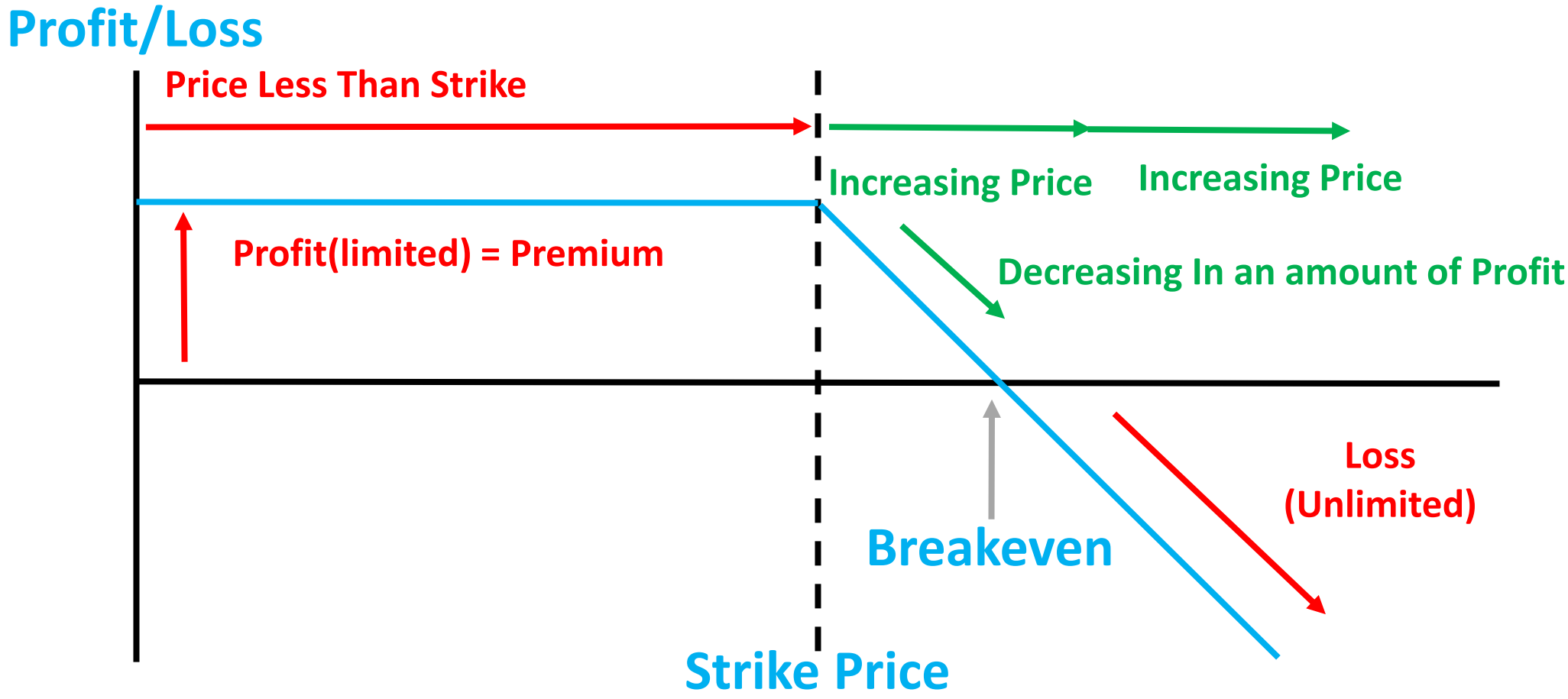
# STRATEGY

## SHORT CALL

| Market scenario | BEARISH on market and bearish on volatility |
|---|---|
| Risk | Unlimited |
| Reward | Limited |
| BEP | Call strike + Premium |

# STRATEGY

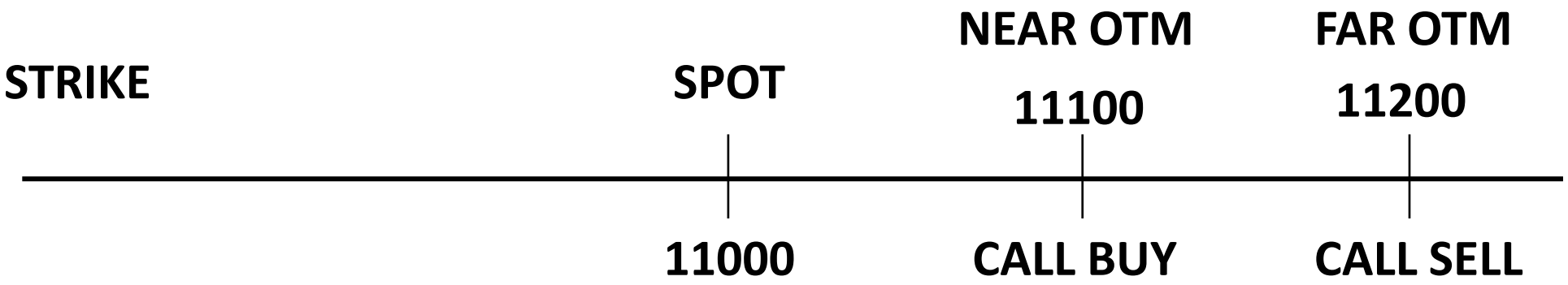
## SHORT CALL



# BULL CALL SPREAD (BUY CALL + SELL CALL)

| Market scenario | Moderately Bullish to Bullish |
|---|---|
| Risk | Limited |
| Reward | Limited |
| BEP | strike price of call buy + Net Premium paid |

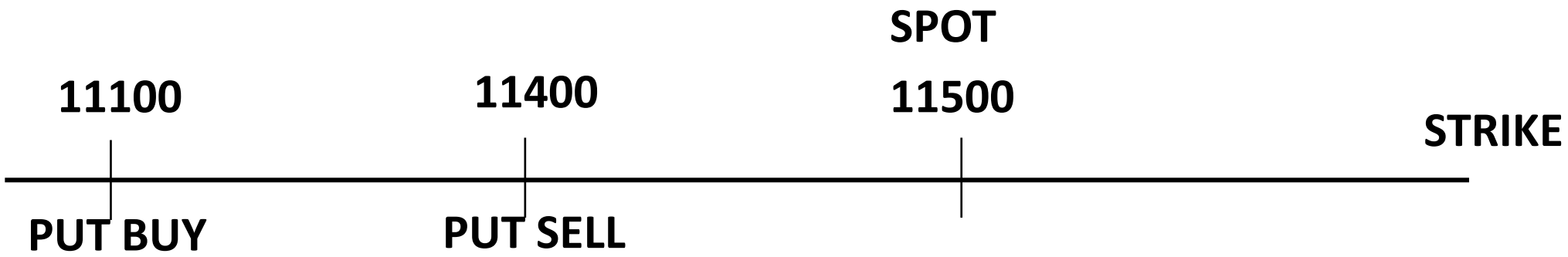
# BULL CALL SPREAD (BUY CALL + SELL CALL)



# PUT BULL SPREAD (PUT SELL + PUT BUY)

| Market scenario | Moderately Bullish to Bullish & bearish on Volatility |
|---|---|
| Risk | Limited |
| Reward | Limited |
| BEP | strike price of put sell - Net Premium received |

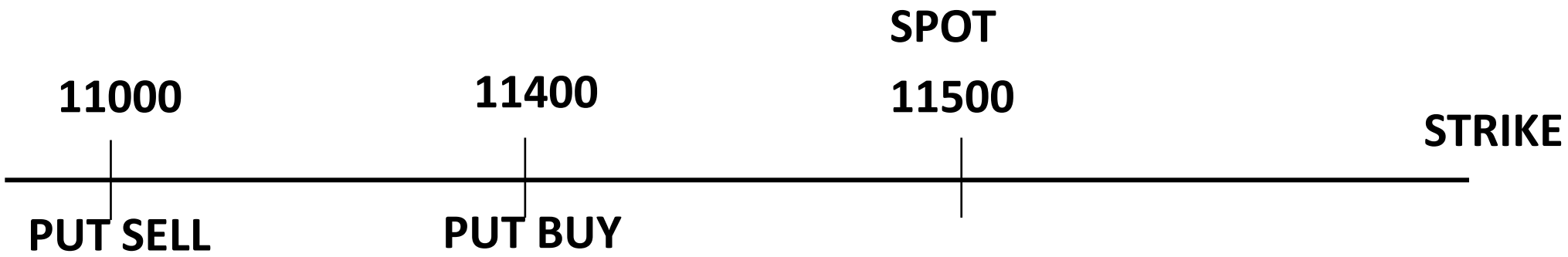
# PUT BULL SPREAD (PUT SELL + PUT BUY)



# PUT BEAR SPREAD (PUT BUY + PUT SELL)

| Market scenario | Moderately Bearish to Bearish |
|---|---|
| Risk | Limited |
| Reward | Limited |
| BEP | strike price of purchased put - Net debit paid |

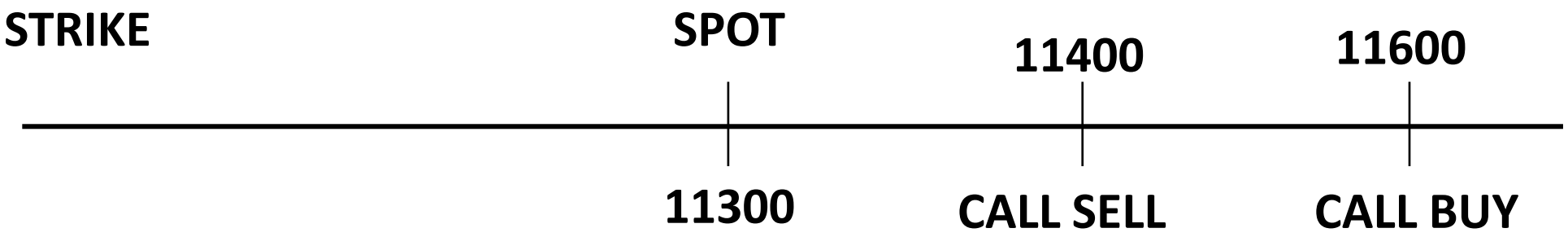
# PUT BEAR SPREAD (PUT BUY + PUT SELL)



# CALL BEAR SPREAD (CALL SELL + CALL BUY)

| Market scenario | Moderately Bearish to Bearish & bear on Volatility |
|---|---|
| Risk | Limited |
| Reward | Limited |
| BEP | strike price of call sell + Net premium received |

# CALL BEAR SPREAD (CALL SELL + CALL BUY)



# COVERED CALL (BUY STOCK + SELL CALL)

| Market scenario | Neutral to moderately Bullish |
|---|---|
| Risk | If stock is moving down you will lose your stock value but you will gain the premium as buyer is not going to buy. If stock is moving up beyond the strike, you have to give up all the gain. |
| Reward | Strike + Premium |
| BEP | Stock Price Paid - Premium |

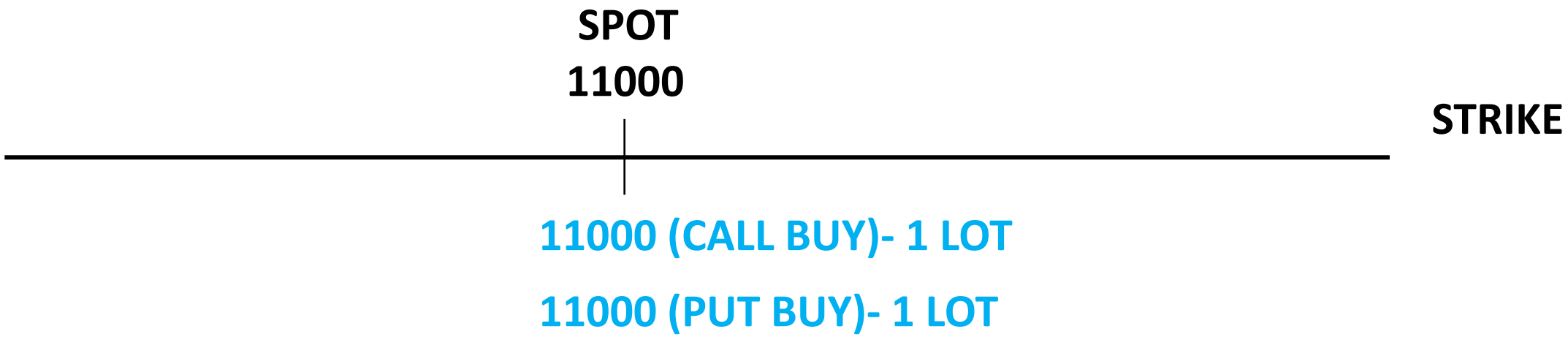
# PROTECTIVE PUT (LONG STOCK + LONG PUT)

| Market scenario | Bullish |
|---|---|
| Risk | Loss limited to Stock price + Put premium – Put Strike price |
| Reward | Unlimited |
| BEP | Put premium + Stock price |

# LONG STRADDLE (BUY CALL + BUY PUT OF SAME STRIKE)

| Market scenario | Volatile |
|---|---|
| Risk | Limited (Net Premium Paid) |
| Reward | Unlimited |
| BEP | Upper Break – even point= Strike price of long call + net premium paid<br>Lower Break – even point = Strike price of long put – Net premium Paid |

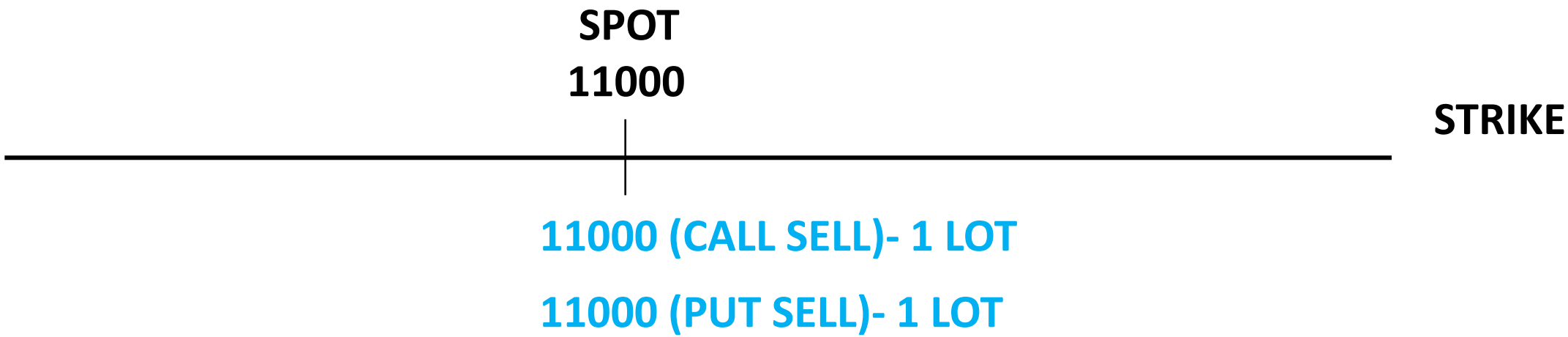
# LONG STRADDLE (BUY ATM CALL + BUY ATM PUT)



# SHORT STRADDLE (SELL CALL + SELL PUT OF SAME STRIKE)

| Market scenario | Les Volatile |
|---|---|
| Risk | Unlimited |
| Reward | Limited to the Premium received |
| BEP | Upper Breakeven point= Strike price of short call + net premium received<br>Lower Breakeven point = Strike price of short put – Net premium received |

# SHORT STRADDLE (SELL ATM CALL + SELL ATM PUT)

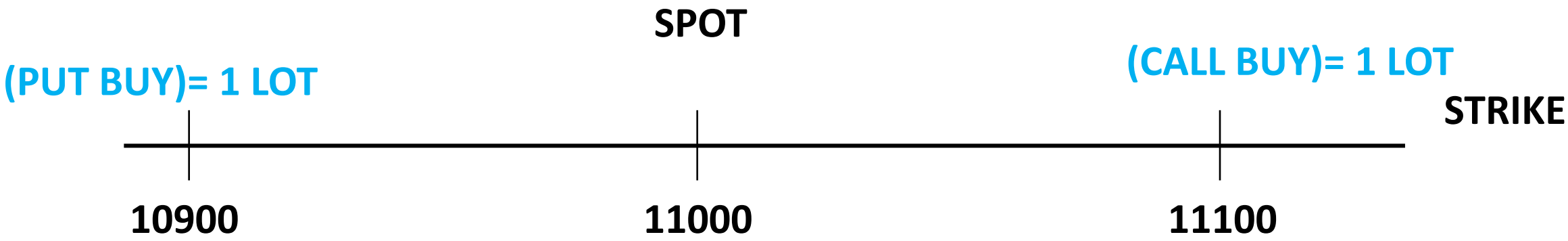


# STRANGLE STRATEGIES

## LONG STRANGLE (BUY OTM CALL + BUY OTM PUT)

| Market scenario | Neutral (Movement is Range Bound) |
|---|---|
| Risk | Limited to net premium paid |
| Reward | Unlimited |
| BEP | Upper BEP: Call Strike + Net premium<br>Lower BEP: Put Strike - Net premium |

# LONG STRANGLE (BUY CALL + BUY PUT OF DIFFERENT STRIKE)

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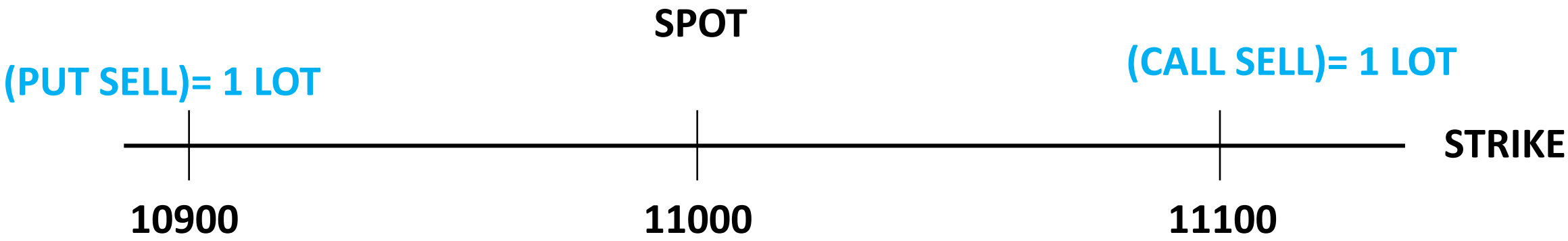
# STRANGLE STRATEGIES

## SHORT STRANGLE (SELL OTM CALL + SELL OTM PUT)

| Market scenario | Neutral (Movement is Range Bound) |
|---|---|
| Risk | Unlimited |
| Reward | Limited to total premium received |
| BEP | Upper BEP: Call Strike + Net premium<br>Lower BEP: Put Strike - Net premium |

# SHORT STRANGLE(SELL CALL + SELL PUT OF DIFFERENT STRIKE)

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# DIFFRENCE BETWEEN LONG STRADDLE AND SHORT STRADDLE

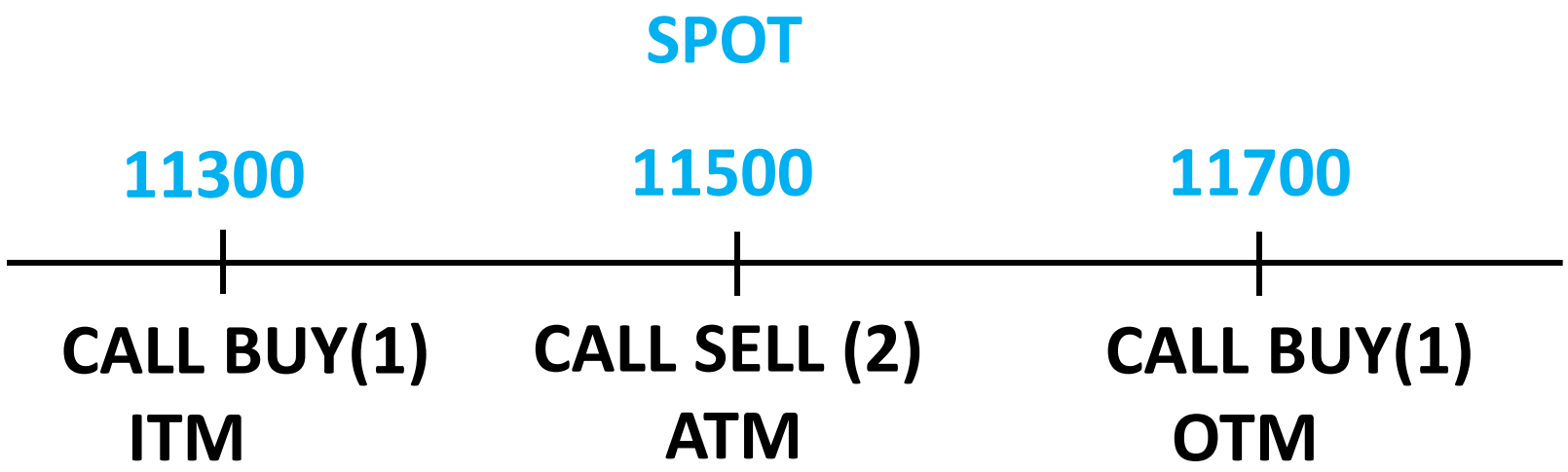
# WHEN TO MAKE STRADDLE STRANGLE STRATEGY

# INTRODUCING

# BUTTERFLY STRATEGY

# LONG CALL BUTTERFLY STRATEGY

## (SELL 2 ATM CALL + BUY I ITM CALL + BUY 1 OTM CALL)



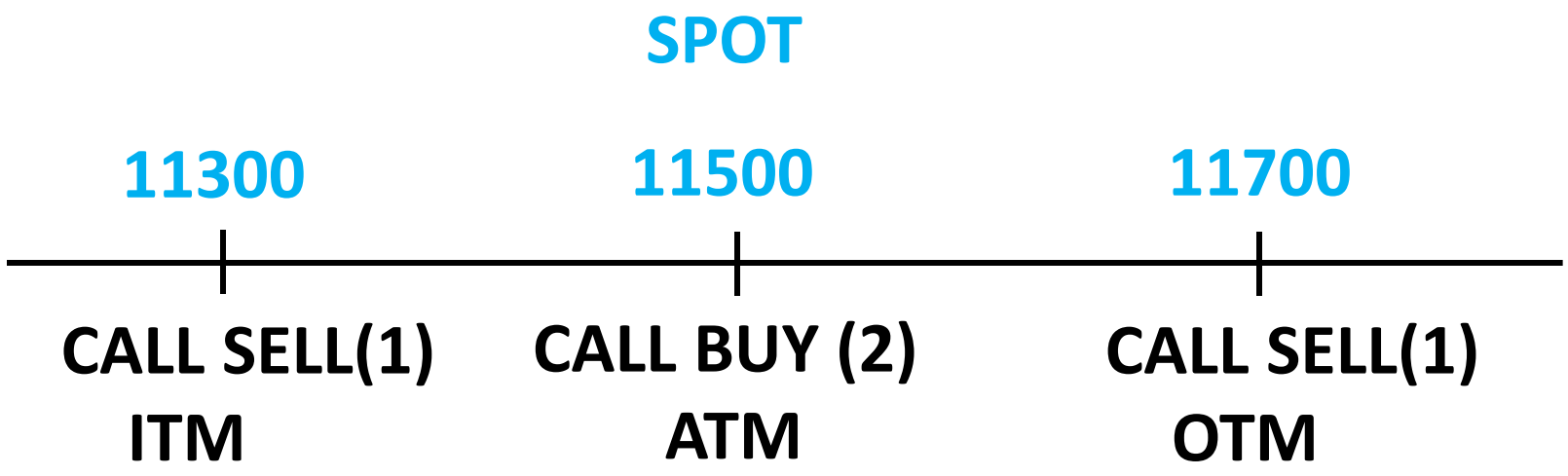
# LONG CALL BUTTERFLY STRATEGY

## (SELL 2 ATM CALL + BUY I ITM CALL + BUY 1 OTM CALL)

| Market scenario | When the investor is neutral to market direction and bearish in volatility |
|---|---|
| Risk | Net premium paid |
| Reward | Limited to (Difference between adjacent strikes- net debit) |
| BEP | Upper BEP: Strike price of higher strike long call - Net premium<br>Lower BEP: Strike price of lower strike long call + Net premium |

# SHORT CALL BUTTERFLY STRATEGY

## (BUY 2 ATM CALL SELL 1 ITM CALL SELL 1 OTM CALL)



# SHORT CALL BUTTERFLY STRATEGY

## (BUY 2 ATM CALL SELL 1 ITM CALL SELL 1 OTM CALL)

| Market scenario | You are Neutral on market direction and bullish in volatility |
|---|---|
| Risk | Limited (Net difference between the adjacent strike) |
| Reward | Limited to the premium received |
| BEP | Upper BEP: Strike price of highest strike Short Call - Net premium Received<br>Lower BEP: Strike price of lowest strike long Call + Net premium Received |

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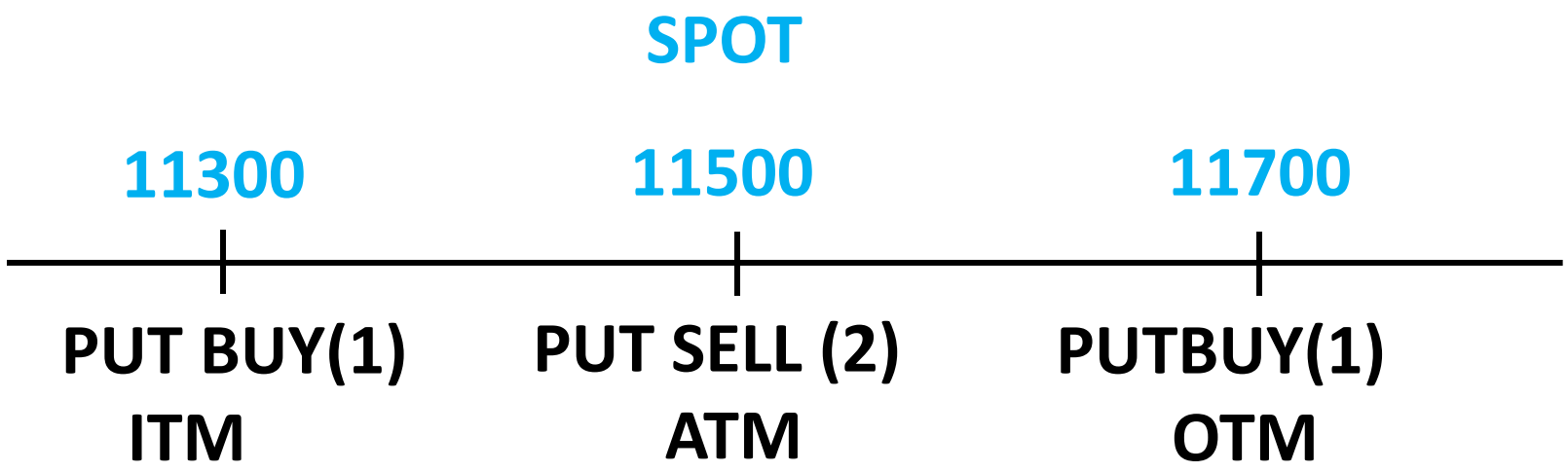
# LONG PUT BUTTERFLY STRATEGY

**Buy 2 ATM Call Sell 1 ITM Call Sell 1 OTM Call**



# LONG PUT BUTTERFLY STRATEGY

**(SELL 2 ATM PUT + BUY I ITM PUT + BUY 1 OTM PUT)**

| Market scenario | When the investor is neutral to market direction and bearish in volatility |
|---|---|
| **Risk** | Net premium paid |
| **Reward** | Limited to (Difference between adjacent strikes- net debit) |
| **BEP** | Upper BEP: Strike price of higher strike long put - Net premium<br>Lower BEP: Strike price of lower strike long put + Net premium |

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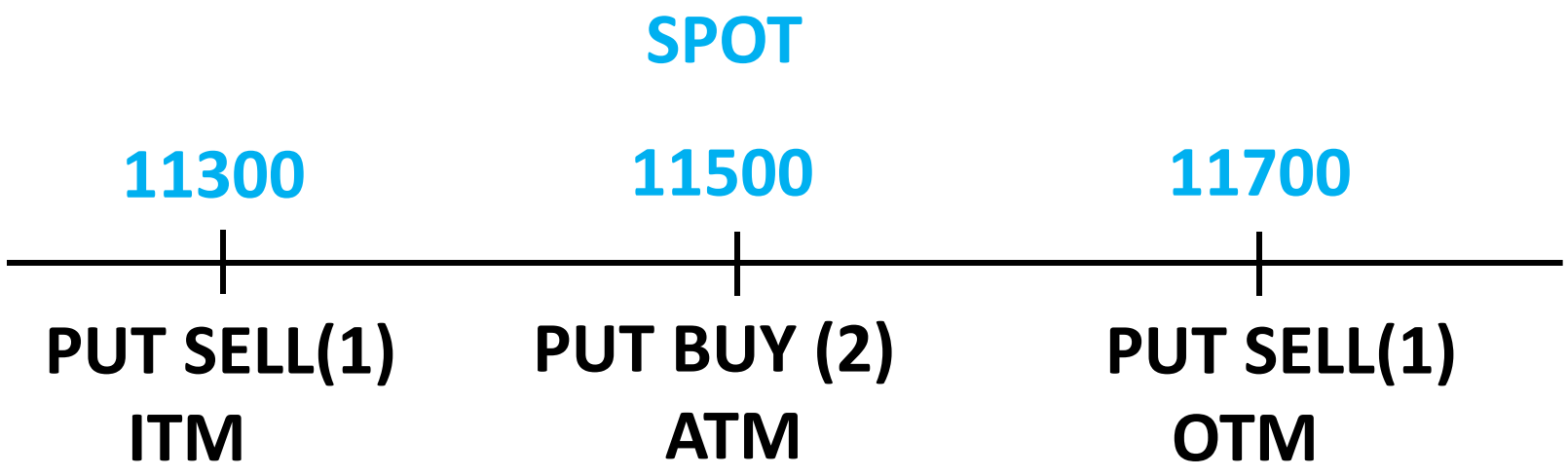
# SHORT PUT BUTTERFLY STRATEGY

**(BUY 2 ATM PUT, SELL 1 ITM PUT, SELL 1 OTM PUT)**

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# SHORT PUT BUTTERFLY STRATEGY

## (BUY 2 ATM PUT, SELL 1 ITM PUT, SELL 1 OTM PUT)

| Market scenario | Neutral on market direction and bullish on volatility |
|---|---|
| Risk | Limited (Difference between adjacent strikes- net debit) |
| Reward | Limited to the premium received |
| BEP | Upper BEP: Strike price of highest strike Short put - Net premium Received<br>Lower BEP: Strike price of lowest strike long put + Net premium Received |

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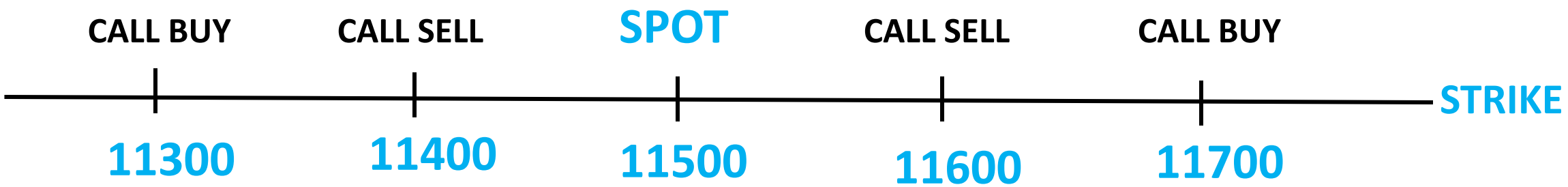
# CONDOR STRATEGIES

# LONG CALL CONDOR

| Market scenario | Low Volatility |
|---|---|
| Risk | Limited |
| Reward | Limited |
| BEP | Upper BEP: highest strike - Net premium<br>Lower BEP: lowest strike + Net premium |

# LONG CALL CONDOR

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# LONG PUT CONDOR

| Market scenario | Low Volatility |
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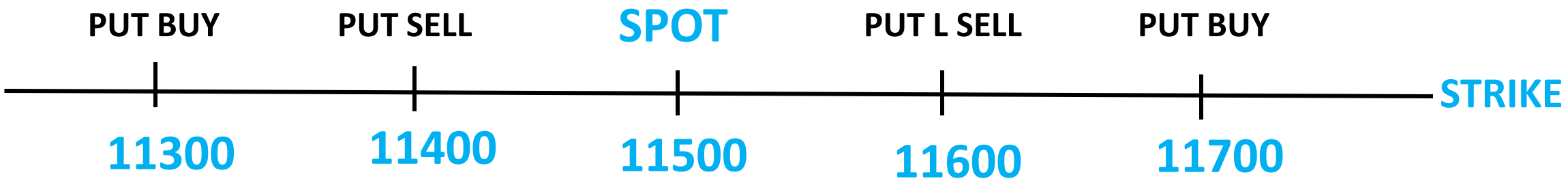
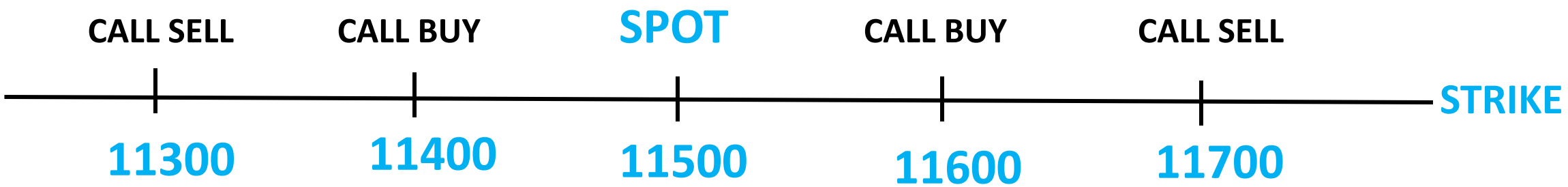
# LONG PUT CONDOR



# SHORT CALL CONDOR

| Market scenario | Market will cross range but not sure in which direction |
|---|---|
| Risk | Limited |
| Reward | Limited |
| BEP | Upper BEP: highest strike - Net premium<br>Lower BEP: lowest strike + Net premium |

# SHORT CALL CONDOR

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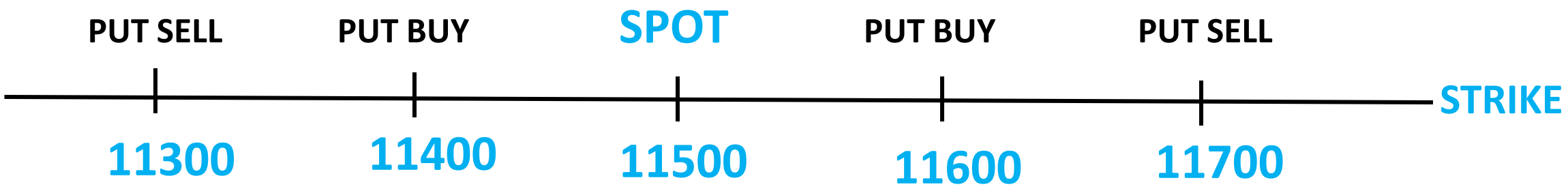
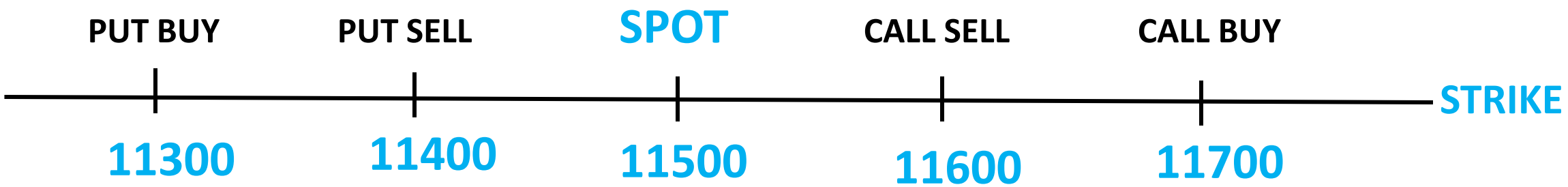


# LONG IRON CONDOR

| Market scenario | Low Volatility |
|---|---|
| Risk | Limited |
| Reward | Limited |
| BEP | Upper BEP: highest strike - Net premium<br>Lower BEP: lowest strike + Net premium |

# LONG IRON CONDOR

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# SHORT IRON CONDOR

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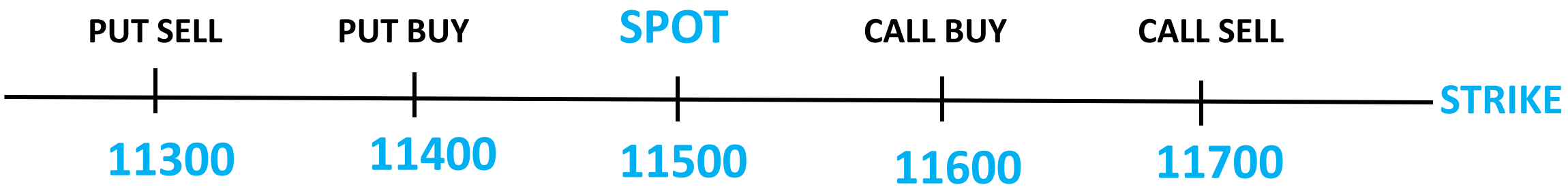
# SHORT IRON CONDOR

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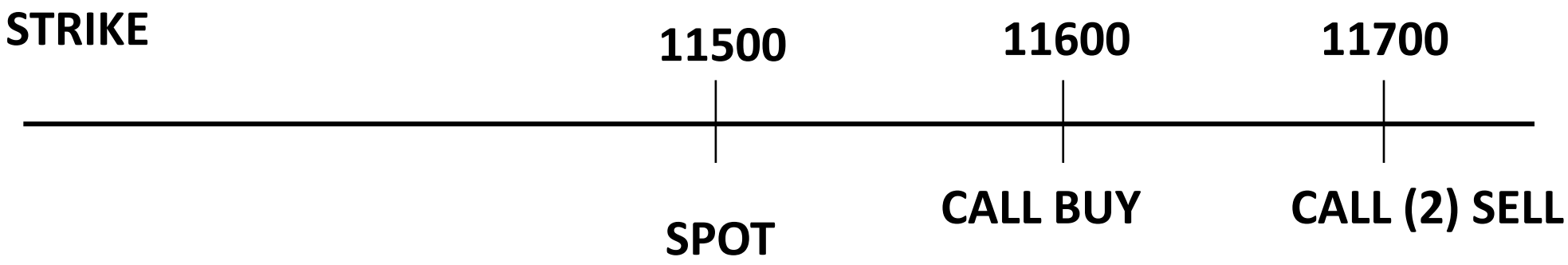
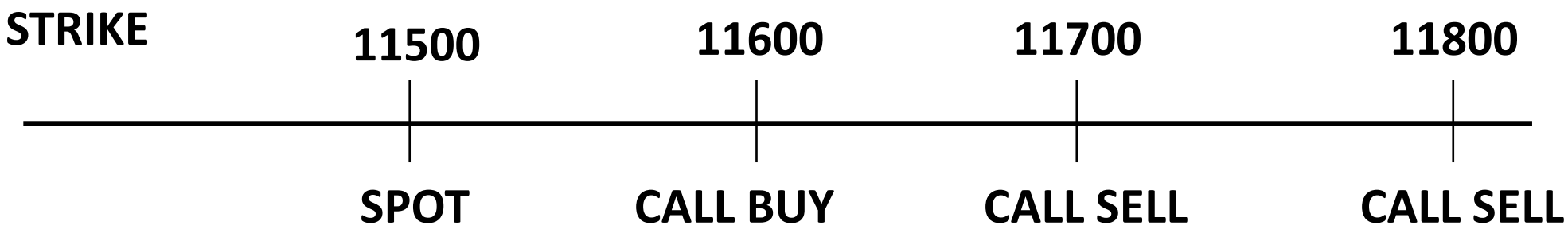
# CALL RATIO SPREAD

# CALL RATIO FRONT SPREAD



# CALL RATIO FRONT SPREAD LADDER

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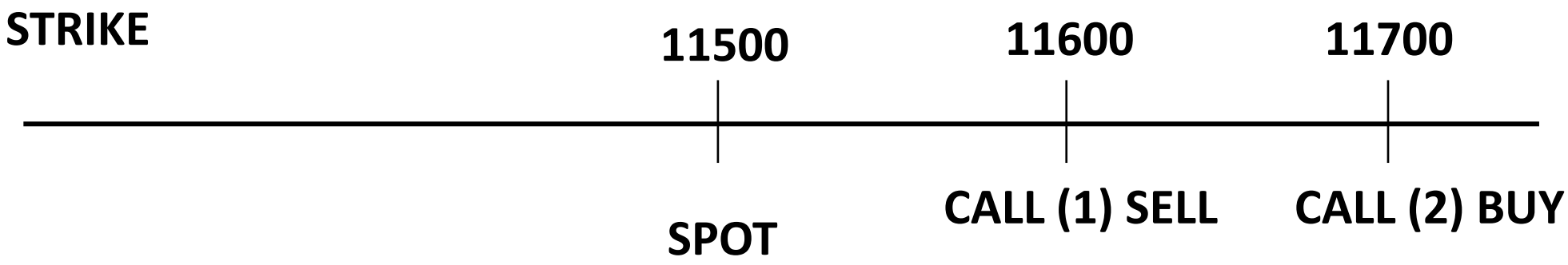
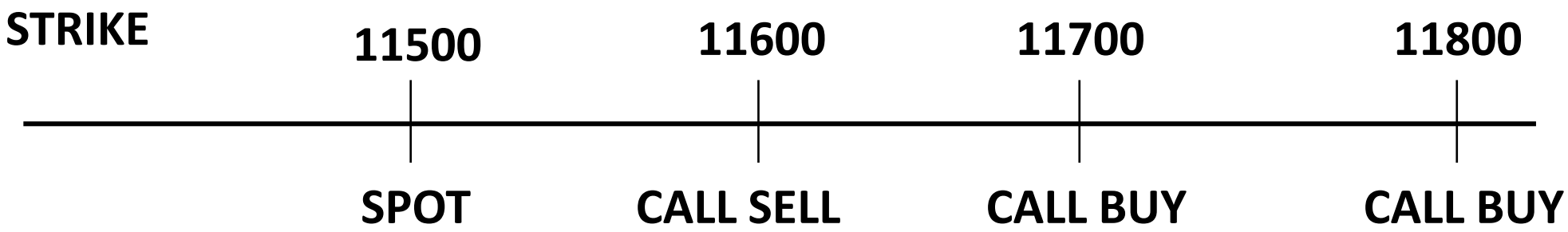
# CALL RATIO BACK SPREAD

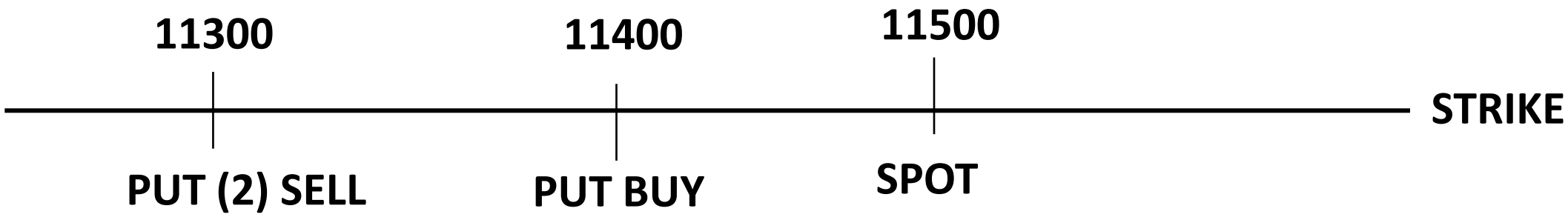


# CALL RATIO BACK SPREAD LADDER

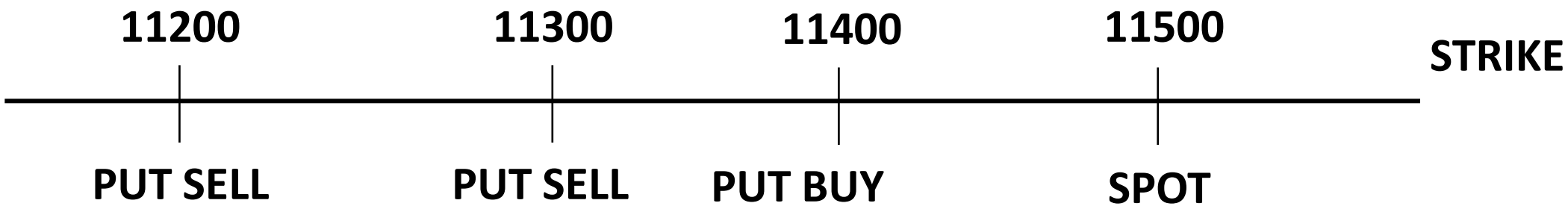


# PUT RATIO SPREAD

# PUT RATIO FRONT SPREAD

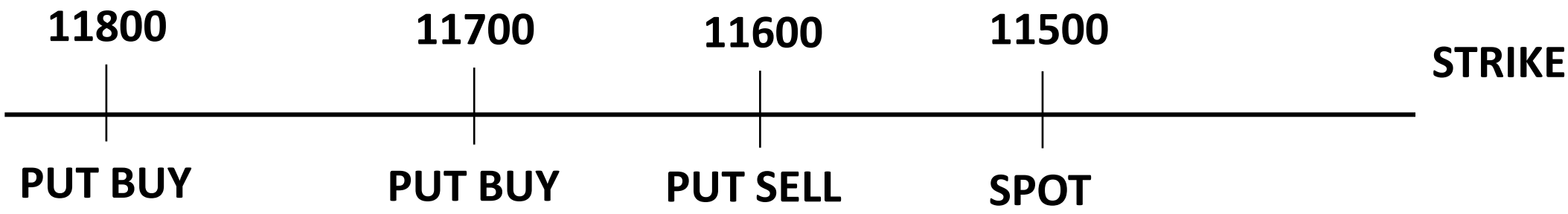


# PUT RATIO FRONT SPREAD LADDER



# PUT RATIO BACK SPREAD

# PUT RATIO BACK SPREAD LADDER

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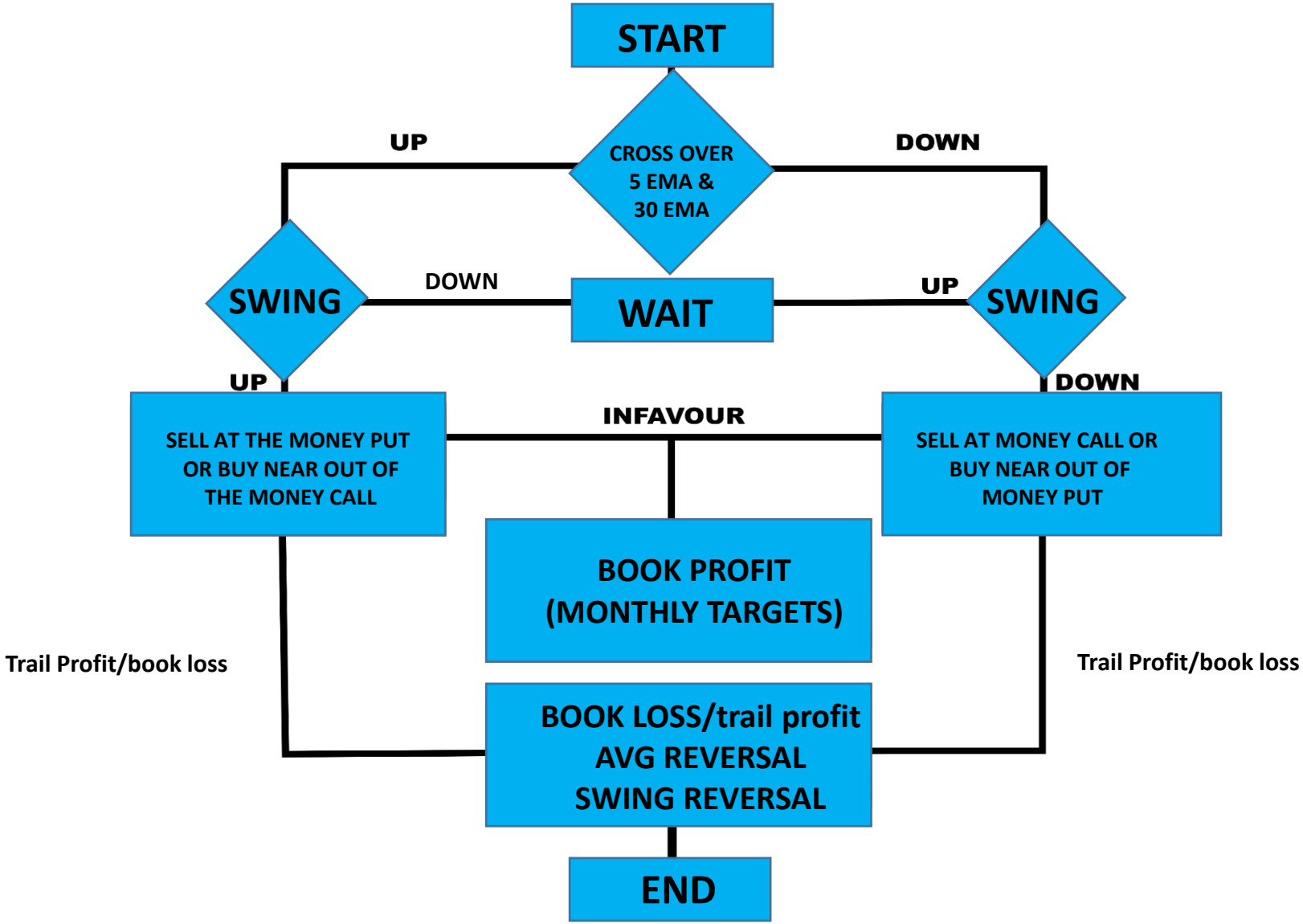

START
CROSS OVER
5 EMA &
30 EMA
UP
DOWN
SWING
DOWN
WAIT
UP
SWING
UP
DOWN
SELL AT THE MONEY PUT
OR BUY NEAR OUT OF
THE MONEY CALL
INFAVOUR
SELL AT MONEY CALL OR
BUY NEAR OUT OF
MONEY PUT
BOOK PROFIT
(MONTHLY TARGETS)
Trail Profit/book loss
Trail Profit/book loss
BOOK LOSS/trail profit
AVG REVERSAL
SWING REVERSAL
END

# CALENDER SPREAD

# LONG CALENDER SPREAD

**SELL NEAR MONTH**

**BUY FAR MONTH**

**Strike Should Be Same**

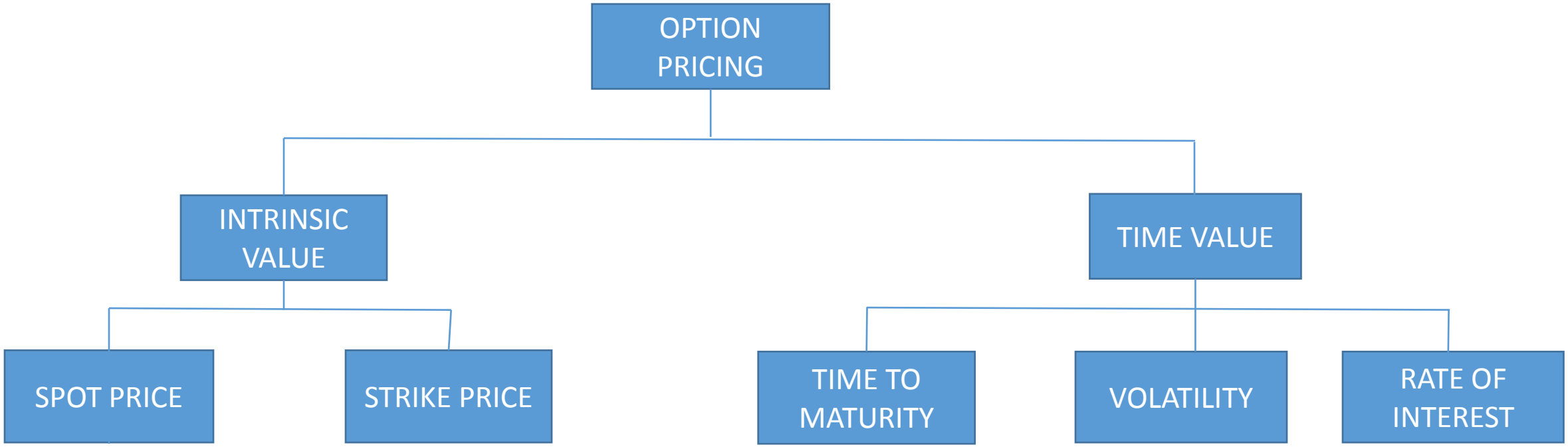
# SHORT CALENDER SPREAD

**BUY NEAR MONTH**

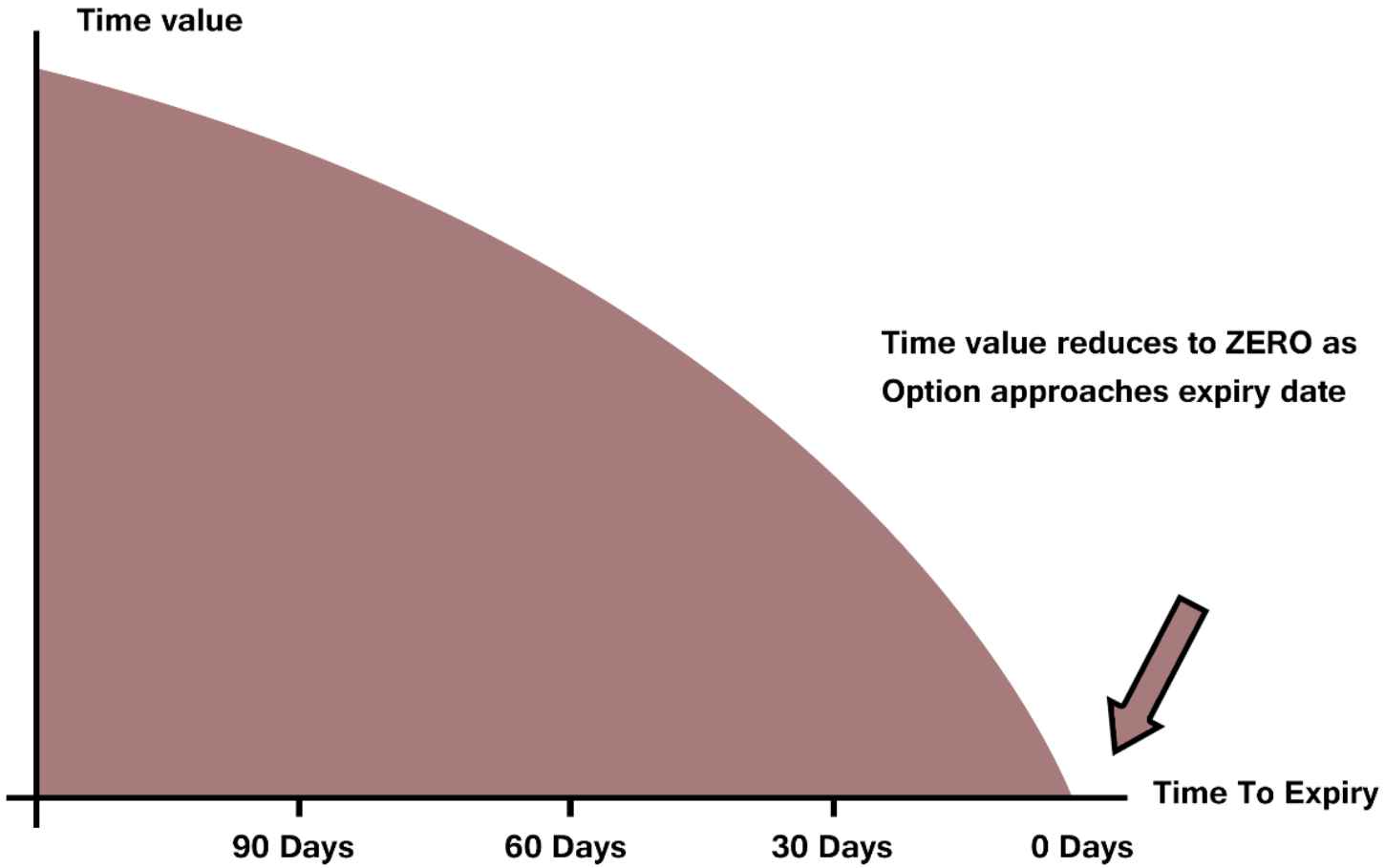
**SELL FAR MONTH**

Strike Should Be Same

# OPTION PRICING



# TIME VALUE DECAY CURVE

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# RELATIONSHIP BETWEEN OPTION PRICE AND ITS VARIABLES

| PARTICULARS | CALL OPTION | PUT OPTION |
|---|---|---|
| Spot | Positive | Negative |
| Strike | Negative | Positive |
| Time | Negative | Negative |
| Volatility | Positive | Positive |
| Rate of interest | Positive | Negative |

# INTRODUCTION TO OPEN INTEREST

| | | OPEN INTEREST |
|---|---|---|
| A<br>BUY 1 CALL | B<br>SELL 1 CALL | 1 |
| C<br>BUY 1 CALL | D<br>SELL 1 CALL | 2 |
| A<br>SELL 1 CALL | D<br>BUY 1 CALL | 1 |
| E<br>BUY 2 CALL | F<br>SELL 2 CALL | 3 |

**Outstanding Contract In The System Is Open Interest**

# INTRODUCTION TO OPEN INTEREST

| PRICE | OPEN INTEREST | INTEPRETATION |
| --- | --- | --- |
|  |  | LONG BUILDUP |
|  |  | SHORT UNWINDING |
|  |  | LONG UNWINDING |
|  |  | SHORT BUILDUP |

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# Where to see OPEN INTEREST

# Where to see OPEN INTEREST

# OPTION CHAIN ANALYSIS

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# PUT CALL RATIO analysis