11.8 BUTTERFLY SPREAD STRATEGY

Explainer Video

A butterfly spread is a relatively more complex trading strategy that involves use of two option spreads together. It may take time to get comfortable with them initially.

In a butterfly strategy, we use any two spreads.
For instance,

BULL CALL SPREAD + BEAR CALL SPREAD

OR

BULL PUT SPREAD + BEAR PUT SPREAD

An important thing to note here that the combination of two spreads always has a common option type. This means that the two spreads combined will be **either call or put**. Different options are not used. The expiry of all the options is same and they all have the same underlying asset.

Butterfly spread is created by buying a call option, selling two call option of a higher strike price and then buying another call option of even higher strike price. The same can even be done with put options as well as taking the opposite side of these trades. We will understand about different types of butterfly spreads shortly.

The steps involved in creating these are:

STEP 1
Buy 1 option at a lower strike price.

STEP 2
Sell 2 options at a middle strike price.

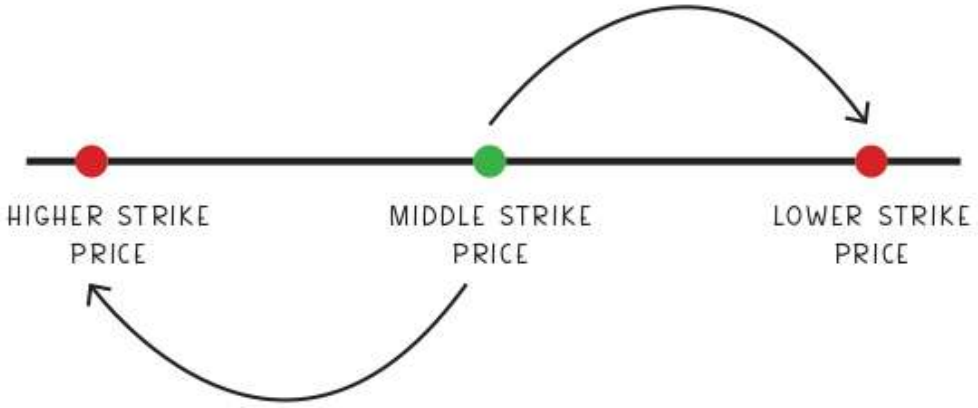
STEP 3
Buy 1 option at a higher strike price.

We can even take opposite ends of this trade.

RULE:

Lower strike price – **Middle strike price** = **Higher strike price** – **Middle strike price**

This means that the difference between the higher strike price and middle strike price will be same as the difference between the middle strike price and lower strike price.



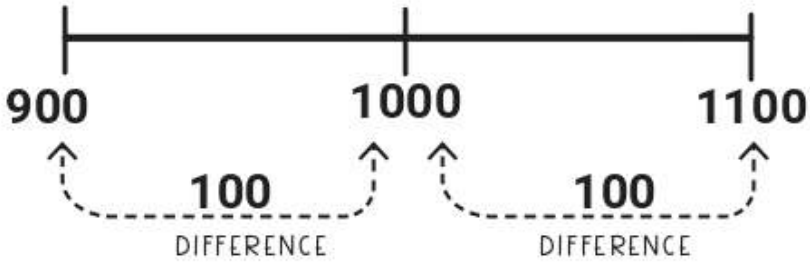
LONG CALL BUTTERFLY

This particular type of butterfly strategy is called Long Call Butterfly. Here, we buy a call option, sell two call options at a higher strike price and then buy another call option at an even higher strike price

For instance,

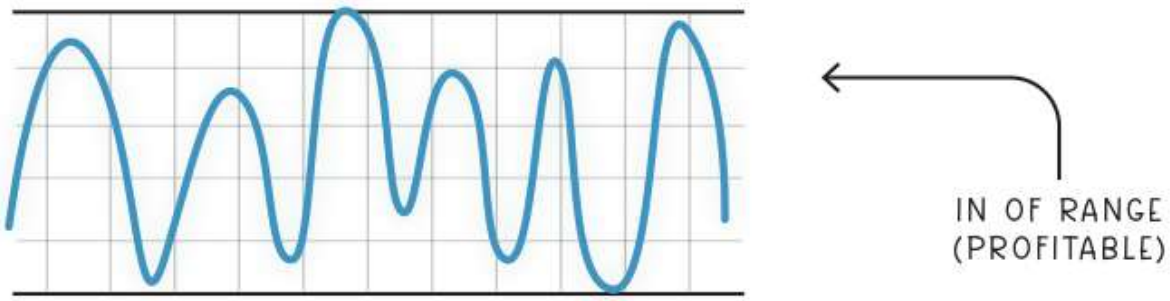
This butterfly spread is a combination of a Bull call spread and a Bear call spread. Such a strategy leads to net outflow of premium.

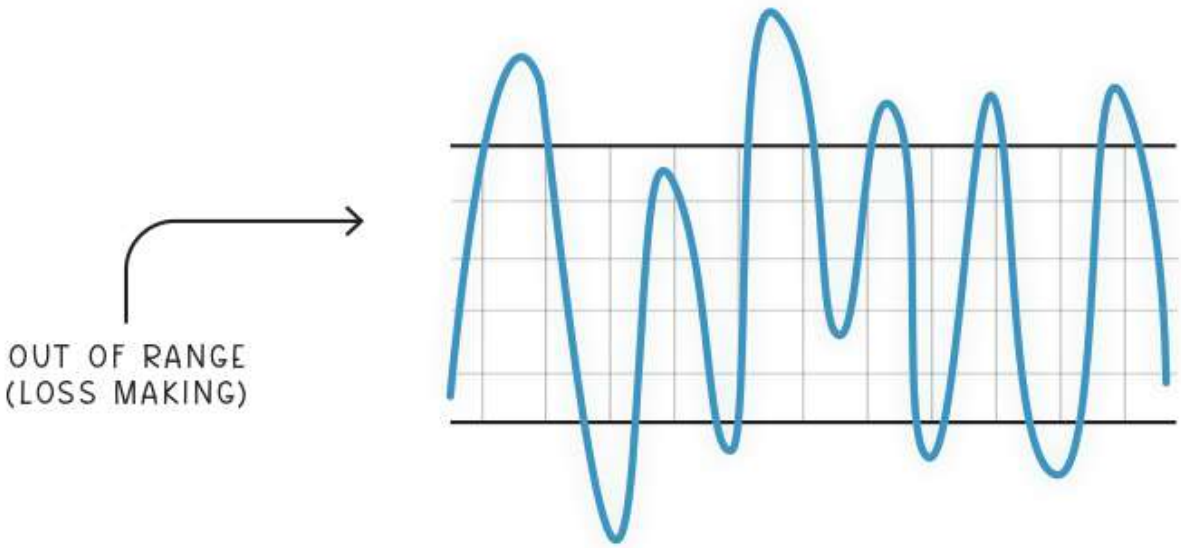
Note that the ratio of 1:2:1 is maintained as 1 Long: 2 Short: 1 Long.

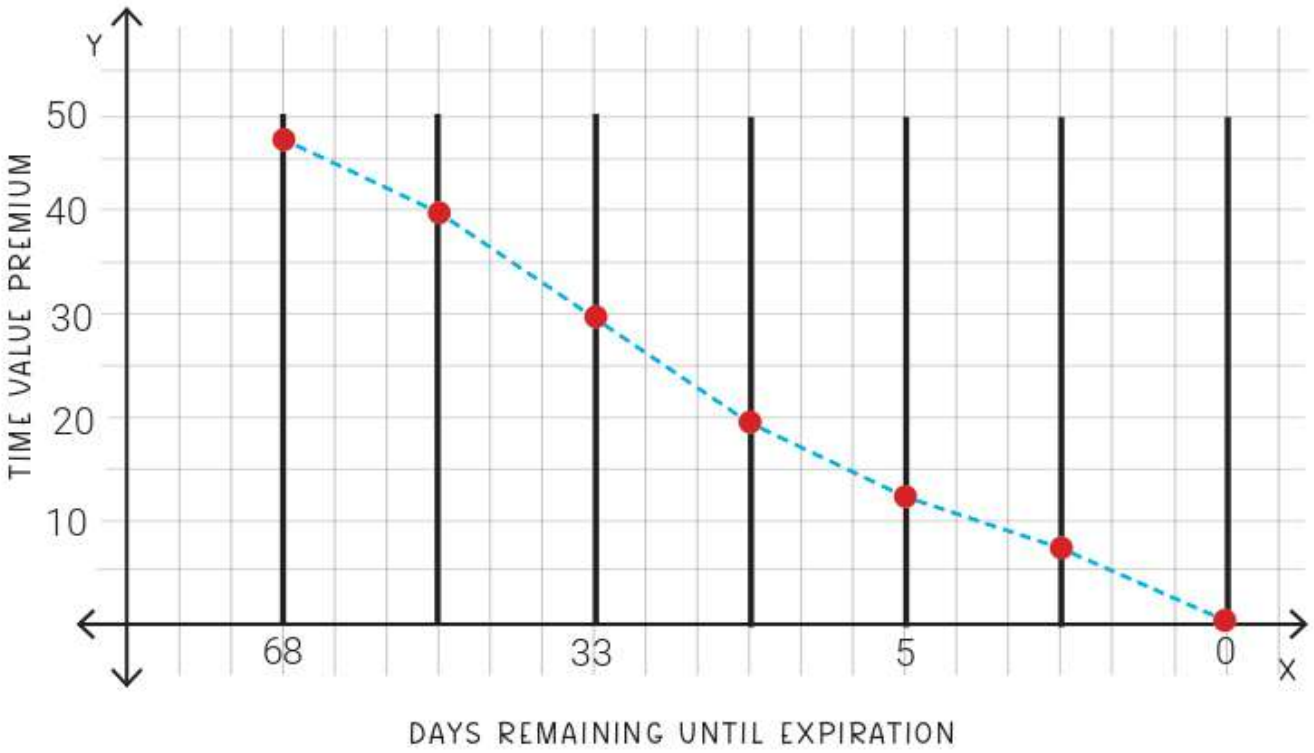


The difference between the strike prices from the middle options' strike price is equal i.e., ₹100.

In a Long Call butterfly, we are again trading based on volatility. If the price of the underlying on expiry is between the two extreme strike prices, we would profit and if it is outside the range, then we would incur losses to the extent of premium paid by us. Here, we need the price to be as close to the middle strike price for us to profit.







We mainly profit from a decreasing volatility or with time decay i.e., due to passage of time. As time passes, the risk of large moves starts to decrease and as a result, the price of the premium also starts to decrease.

This strategy is called Bull Butterfly or Long Call Butterfly. We'll be discussing Long Call Butterfly with an example shortly. **The net premium here will be an outflow. In this strategy we have a limited loss and a limited profit scenario. This means we have defined risk and rewards.**

MAXIMUM PROFIT

= DIFFERENCE FROM MIDDLE STRIKE PRICE TO LOWER STRIKE PRICE – NET PREMIUM PAID

MAXIMUM LOSS

= NET PREMIUM COST

BREAKEVEN:

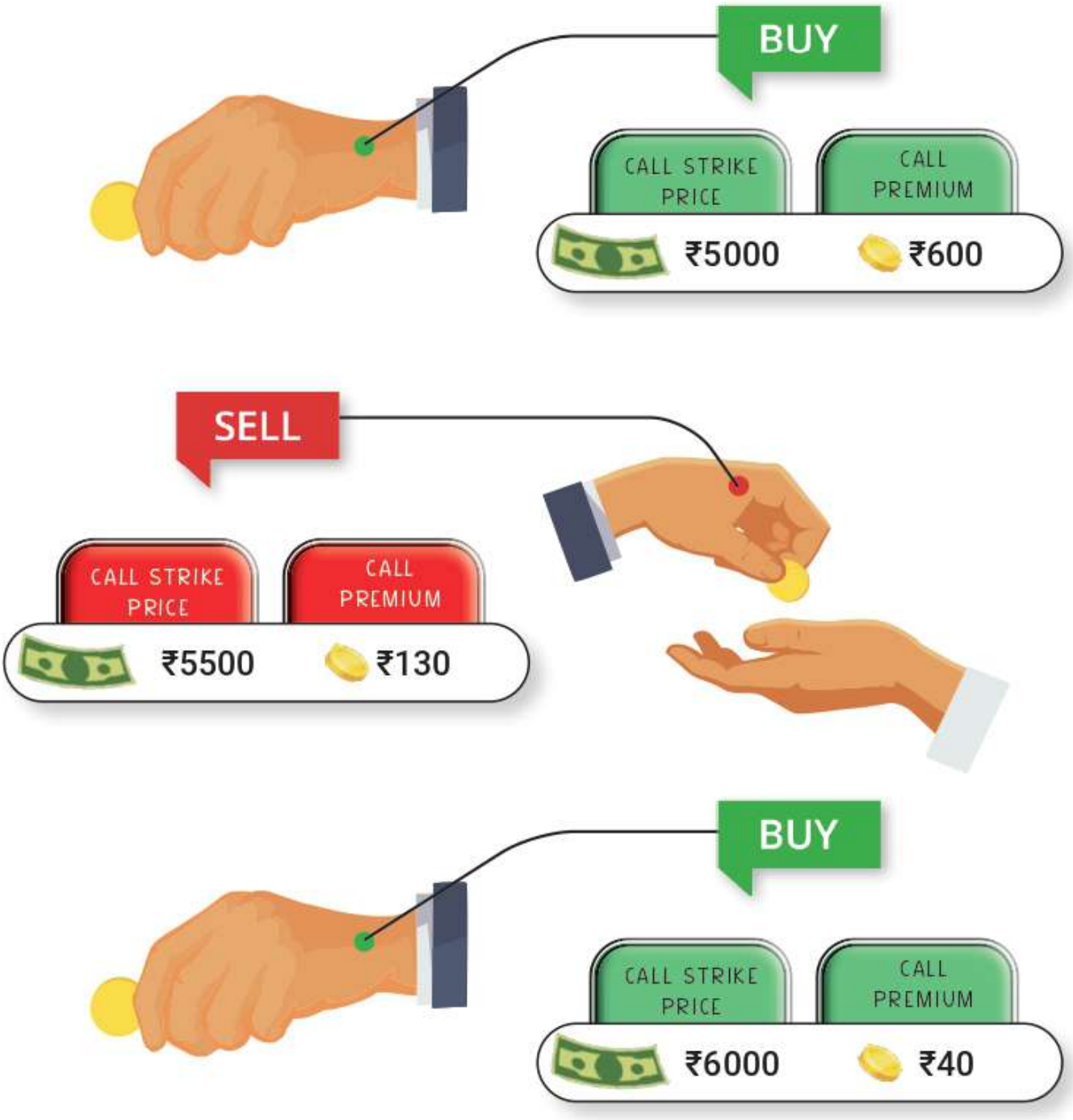
UPSIDE = HIGHER STRIKE PRICE - NET PREMIUM
DOWNSIDE = LOWER STRIKE PRICE + NET PREMIUM

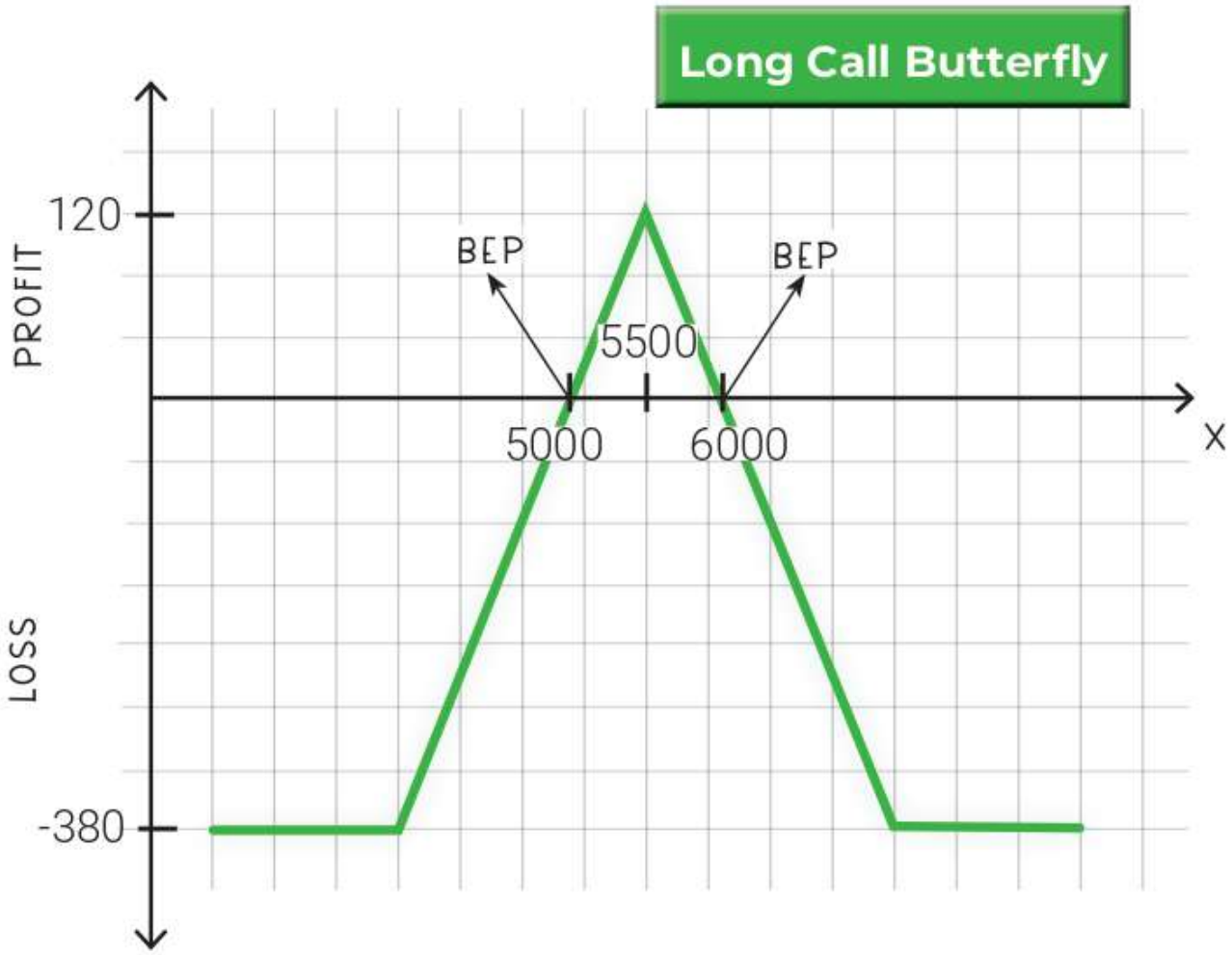
Lets take an example and calculate these numbers for Long Call Butterfly strategy as well as Short Call Butterfly strategy. It will help us understand the payoff, risks and reward better. Once we understand butterfly strategies for call options, you may go ahead and create for put option strategies too.

Suppose,

A stock is trading at ₹5500. Lot Size = 100.

We buy 1 call at a strike price of ₹5000 at a premium of ₹600. We sell 2 calls at a strike price of ₹5500 at a premium of ₹130. We buy 1 call at a strike price of ₹6000 at a premium of ₹40.





MAXIMUM LOSS/ NET PREMIUM/ NET DEBIT/ NET INVESTMENT

= ₹600 – ₹260 + ₹40

= ₹380

At price ₹5000 or below ₹5000, all the 4 options are invaluable i.e., no payoff. And our loss will be fixed at ₹380.

Beyond ₹5000, say at ₹5020, our losses will be reduced with the payoff we get from the first call that we bought at ₹5000. So, at ₹5020 our losses will be = ₹380 – ₹20

= ₹360

On the upside,

BREAK EVEN POINT = ₹5000 + ₹380

= **₹5380**

So, as we move ahead, at ₹5380 we hit the Break-even point. We are at a No profit No loss position. Beyond this point, we start to make profits.

On the downside,

BREAK EVEN POINT = ₹6000 – ₹380

= **₹5620**

At ₹5620, again, we hit the break-even point. Beyond this point, we again start to make losses. As we reach ₹6000 price, our losses are capped at the maximum loss amount of ₹380. Our losses are from 2 calls sold.

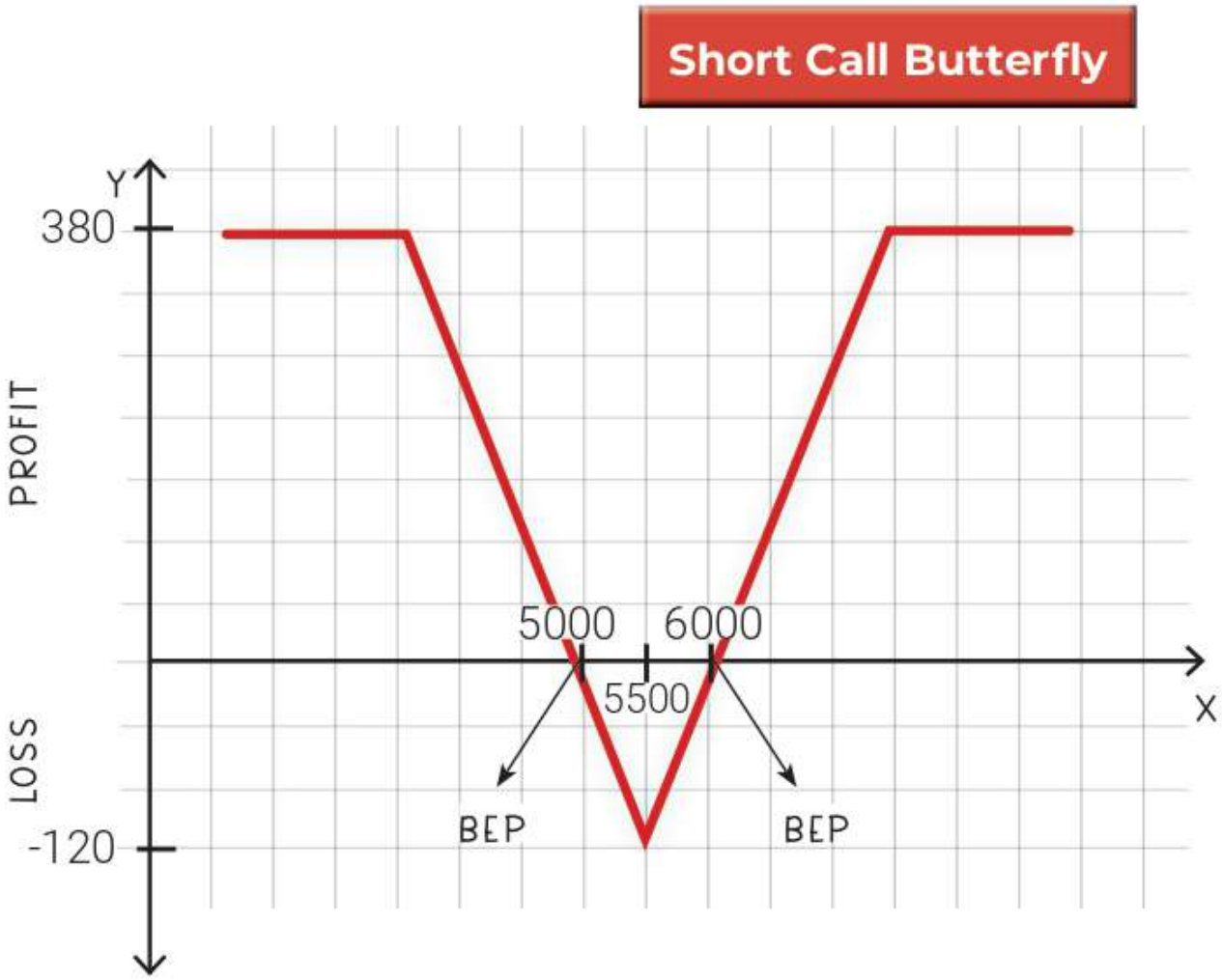
MAXIMUM PROFIT = ₹500 – ₹380

= **₹120**

Moving on, as the price goes up, our profits start to reduce. As a 2 options seller, we make losses as we meet our obligation, and the profits are significantly reduced.

For a short call butterfly, our payoff is exact opposite.

For instance, we would be selling 1 call at ₹5000. Buying 2 calls at ₹5500 and selling 1 more call at ₹6000. The chart is the exact mirror image of a long call butterfly graph.



MAXIMUM PROFIT = Net Premium received

= ₹600 – ₹260 + ₹40

= **₹380**

At price of ₹5000 or below, we have a fixed profit. As we move ahead of ₹5000, our profits start to decrease.

On the upside,

BREAK EVEN POINT = ₹5000 + ₹380

= **₹5380**

We hit break-even at ₹5380 and beyond this we start to make losses.

On the downside,

BREAK EVEN POINT = ₹6000 – ₹380

= **₹5620**

At ₹5620, again, we hit the break-even point and after this we start to make profits again. At ₹6000, our maximum profit is reached and beyond this we make a fixed profit only.

MAXIMUM LOSS = ₹500 – ₹380

= **₹120**

At ₹5500 point, we have our maximum loss. After that, our losses will decrease.

We can see that Long Call Butterfly and Short call butterfly are opposite sides of exact same trade. This means the payoffs for the two are exact opposite to each other.

Similarly, we can make payoff charts for Long Put and Short Put Butterfly strategy. Try doing that.

Also, now that you have understood quite a few strategies, you should take out time and experiment with your own strategies. Remember, there are no rules. You can be as creative as you want. Take any and every possible variation, different underlying assets and see what works for you. Create payoff charts for each of them and then judge which are the ones that work and which are the ones that do not. Understand which strategies work in which scenarios.The fundamental still remains same :

Creating good strategies is where most traders spend most of their time. Once you get comfortable with options and different common strategies, experiment as much as you can. Also, remember creating strategies is not a 1-2 day job. It may take months for one strategy of yours to work. It may take few years and losses before you figure out what works for you. So, make sure you never risk your survival. Keep in mind that we are dealing with derivatives which are highly leveraged instruments. Use Risk Management principles very properly. Avoid unlimited loss potential as much as possible.

Now, its your time to be creative and start testing out different strategies that you may think of. And have patience because its going to really test it.