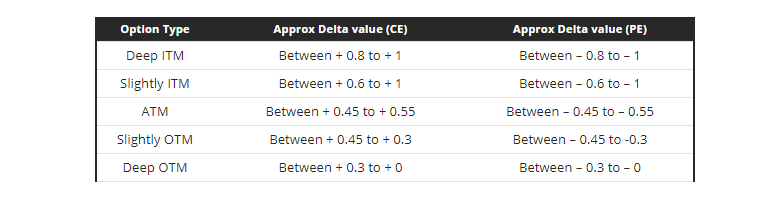
DELTA for Call Option:

If you are long Call, add the delta to the premium, if you are short call, deduct the delta from the premium. Do not consider the algebraic sign at the time of calculating the change in delta. Easier this way

1. Call option lose value when the underlying drops in value. Delta is +ve for call option.  
   2) Call option gains value when the underlying gains in value. Delta is +ve for call option.  
   3) Put option gains value when the underlying drops in value. Delta is -ve for put option.  
   4) Put option loses value when the underlying gains in value. Delta is -ve for put option.

**Expected change in option premium = Option Delta \* Points change in underlying**

All call options with strikes higher than the current market price are OTM option. All call options with strikes below the current market price are in the money option. Likewise, all put option strikes lesser than the current market price is out of the money option and all put option strike which is higher then the current market price is in the money option.

1. Call options has a +ve delta. A Call option with a delta of 0.4 indicates that for every 1 point gain/loss in the underlying the call option premium gains/losses 0.4 points
2. Put options has a –ve delta. A Put option with a delta of -0.4 Indicates that for every 1 point loss/gain in the underlying the put option premium gains/losses 0.4 points
3. OTM options have a delta value between 0 and 0.5, ATM option has a delta of 0.5, and ITM option has a delta between 0.5 and 1.

Eg:

1. What is the approximate Delta value for the 8400 CE when the spot is 8312?
   1. Delta should be between 0 and 0.5 as 8400 CE is OTM. Let us assume Delta is 0.4
2. Assume Nifty spot moves from 8312 to 8400, what do you think is the Delta value?
   1. Delta should be around 0.5 as the 8400 CE is now an ATM option
3. Further assume Nifty spot moves from 8400 to 8500, what do you think is the Delta value?
   1. Delta should be closer to 1 as the 8400 CE is now an ITM option. Let us say 0.8.
4. Finally assume Nifty Spot cracks heavily and drops back to 8300 from 8500, what happens to delta?
   1. With the fall in spot, the option has again become an OTM from ITM, hence the value of delta also falls from 0.8 to let us say 0.35.
5. What can you deduce from the above 4 points?
   1. Clearly as and when the spot value changes, the moneyness of an option changes, and therefore the delta also changes.

this is a very important point here – **the delta changes with changes in the value of spot**. Hence delta is a variable and not really a fixed entity.

**Important Points:**

 Deep OTM options tends to put on an impressive percentage however for this to happen the spot has to move by a large value.

Avoid buying **deep OTM** options because the deltas are really small and the underlying has to move massively for the option to work in your favor. There is more bang for the buck elsewhere.

The slightly OTM option which usually has a delta value of say 0.2 or 0.3 is more sensitive to changes in the underlying. For any meaningful change in the underlying the percentage change in the slightly OTM options is very impressive.

 Buying slightly OTM option is more expensive than buying deep OTM options, but if you get your act right you stand to make a killing. Whenever you buy options, consider buying slightly OTM options

ATM options are more sensitive to changes in the spot when compared to OTM options. Now because the ATM’s delta is high the underlying need not really move by a large value. Even if the underlying moves by a small value the option premium changes.

Buy ATM options when you want to play safe. The ATM option will move even if the underlying does not move by a large value.

**This means to say when you buy a deep ITM option it is as good as buying the underlying itself.** This is because whatever is the change in the underlying, the deep ITM option will experience the same change.

Buy the ITM options when you want to play very safe. When I say safe, I’m contrasting the deep ITM option with deep OTM option. The ITM options have a high delta, which means they are most sensitive to changes in the underlying.

Long call and Short Put have +ve deltas.

Short Call and Long Put have -ve deltas.

The Gamma’

also referred to as **the curvature of the option** gives the rate at which the option’s delta changes as the underlying changes. The gamma is usually expressed in deltas gained or lost per one point change in the underlying – with the delta increasing by the amount of the gamma when the underlying rises and falling by the amount of the gamma when the underlying falls.

the Gamma is always a positive number for both Call and Put Option. Therefore when a trader is long options (both Calls and Puts) the trader is considered ‘Long Gamma’ and when he is short options (both calls and puts) he is considered ‘Short Gamma’.

Avoid shorting option contracts which has a large Gamma.

 Gamma peaks when the option hits ATM status. This implies that the rate of change of delta is highest when the option is ATM. In other words, ATM options are most sensitive to the changes in the underlying.

 ATM options have highest Gamma – **avoid shorting ATM options.**

* Delta changes rapidly for ATM option
* Delta changes slowly for OTM and ITM options
* Never short ATM or ITM option with a hope that they will expire worthless upon expiry
* OTM options are great candidates for short trades assuming you intend to hold these short trades upto expiry wherein you expect the option to expire worthless

**Theta:**

“**All other things being equal, an option is a depreciating asset. The option’s premium erodes daily and this is attributable to the passage of time**”

The Theta or **time decay factor**is the rate at which an option loses value as time passes. Theta is expressed in points lost per day when all other conditions remain the same. Time runs in one direction, hence theta is always a positive number.

A long option (option buyer) will always have a negative theta meaning all else equal, the option buyer will lose money on a day by day basis. A short option (option seller) will have a positive theta. Theta is a friendly Greek to the option seller.

Theta does not play a big role when it comes to intraday trading. However the effect of theta is high just around expiry…so please be aware

Volatility:

‘Volatility’ as the riskiness of the stock or an index. Volatility is a % number as measured by **standard deviation**.

A statistical measure of the dispersion of returns for a given security or market index. Volatility can either be measured by using the standard deviation or variance between returns from that same security or market index. Commonly higher the standard deviation, higher is the risk

If i need to trade nifty on 25th oct 2015 then to find standard deviation which data or data of nifty from which to what date is needed. and can you come up with a figure at which the nifty shall trade on 25th oct.2015

Use Nifty’s 6 months data to evaluate the SD, this will help.

https://chartink.com/screener/open-high-previous-close-10

https://chartink.com/screener/open-low-previous-close-14

https://chartink.com/screener/bearish-harami-bw

https://chartink.com/screener/bearish-harami-bb

https://chartink.com/screener/bullish-harami-bw

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