

## BSM MODEL

$$C(S_t, t) = N(d_1)S_t - N(d_2)PV(K)$$

$$d_1 = \frac{1}{\sigma\sqrt{T-t}} \left[ \ln\left(\frac{S_t}{K}\right) + \left(r + \frac{\sigma^2}{2}\right)(T-t) \right]$$

$$d_2 = d_1 - \sigma\sqrt{T-t}$$

$$PV(K) = Ke^{-r(T-t)}$$

?

Given  
condition

Exercise price

Time due

Risk free rate

Volatility

Need to  
prepare

Estimated  
stock price

Dividend

Copy formula from  
website

Can't use directly

Realise need to  
install package  
"scipy"

Try formula with test  
data

Try another

Test data matched!

Realise stats.norm.cdf = N(d1)  
Use 1- N(d1) = 1- stats.norm.cdf = N(-d1)

Fail, find out problem