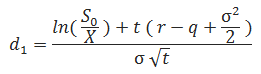
**SOLUTION (BLACK-SCHOLES CALL PRICE)**

Black Scholes Call Price Formula =

Black-Scholes formula for call option price

when:



Black-Scholes formula for d2

S = Stock Price

X = Exercise Price

r = Risk-free interest rate

t = Time to expiration (No of years)

σ = Standard Deviation/Volatility

Stock Price (S) = $40

Exercise Price (X) = $45

Risk-free interest rate (r) = 3%

Time to Expiration (t) = 4 months/120 days

Volatility/Standard Deviation (σ) = 40%

d1 = In(40/45) + (0.03+0.5(0.4)2) 120/365

0.4(√120/365)

d1 = -0.11778 + (0.03+0.08)(0.32877)

0.4(0.57338)

d1 = -0.11778 + (0.11)(0.32877)

0.229352

d1 = -0.08162 / 0.22935

d1 = **-0.35586**

d2 = d1 - σ√t

d2 = -0.35586– 0.4√120/365

d2 = -0.35586– 0.229352

d2 = **-0.58522**

d1 ≈ -0.36

N(-0.36) = 0.3594

d2 ≈ -0.59

N(-0.59) = 0.2776

Therefore, the Call Price is;

C0 = 40(0.3594) – (45/e0.03(120/365)) 0.2776

C0 = 14.376 – (45/1.009912)(0.2776)

C0 = 14.376 – (44.55835)(0.2776)

C0 = $14.38 - $12.37

C0 = **$2.01**