FINANCE 2.

$C = N(d_1)S - N(d_2)Xe^{-rt}$

Stock Price $= S = \$40$

Exercise Price $= X = \$45$

$r = 3\%$ [0.03]

$T = 4$ months [0.333]

$\sigma = 40\%$ [0.4]

$$d_1 = \frac{\text{Log}[S/Xe^{-rt}]}{\sigma\sqrt{T}} + \frac{\sigma\sqrt{T}}{2}$$

$$d_1 = \frac{\text{Log}[40/45e^{(-0.03)(0.333)}]}{0.4\sqrt{0.333}} + \frac{0.4\sqrt{0.333}}{2}$$

$$d_1 = \frac{\text{Log}\,0.8978}{0.4 \times 0.5771} + \frac{0.23084}{2}$$

$$d_1 = \frac{-0.04682}{0.23084} + \frac{0.23084}{2}$$

$$d_1 = -0.2028 + 0.11542$$

$$= -0.08738$$

$$d_2 = \frac{\text{Log}[S/Xe^{-rt}]}{\sigma\sqrt{T}} - \frac{1}{2}\sigma\sqrt{T}$$

$$d_2 = -0.2028 - 0.11542$$

$$= -0.31822$$

$C = N(d_1)40 - N(d_2)44.553$

$C = N(-0.08738)40 - N(-0.31822)44.553$

$C = (0.47)(40) - (0.38)44.553$

$C = 18.8 - 16.93014$

$C = 2.06986$