Quiz A for 1:00 Class: 05/01/13 Name Key

Kodak Goes Dark (KGD) Inc. is considering whether or not to build a new data storage facility and has hired your consulting firm to determine how being able to abandon the facility rather than continuing to operate it will affect the value of the facility. Set up the calculations needed to provide them with an answer.

Information on the facility:
Cost to build factory = $35 million
Life of factory = eight years
Present value today of the factory's cash flows: first two years = $10 million; first four years = $25 million; all eight years = $45 million
Proceeds if sell factory at any time over the next four years = $15 million
Standard deviation of returns on factory: first two years = 40%; first four years = 45%; first seven years = 48%; all eight years = 50%

Information on possible expansion of the facility:
Cost to expand at any time over the next two years = $10 million
Present value of expansion's cash flows: PV at the time of expansion = $9.5 million; PV today = $8 million
Life of expansion = five years (once built)
Standard deviation of returns on expansion: over next two years = 55%; over next seven years = 60%

Returns on U.S. Treasuries: 1-year = 1%; 2-year = 1.5%; 3-year = 2%; 4-year = 2.5%; 5-year = 3%; 7-year = 3.5%; 8-year = 4%; 10-year = 5%

Wall Street Journal Questions are on the back of this page.

$+4\ (P = PVCK)(1 - N(d_2)) - S^X(1 - N(d_1))$ (4)

$+4\ (PVCK) = \frac{15}{(1.025)^4}$ (+6, +6, +4) (20)

$+4\ (d_2 = d_1 - .45\sqrt{4})$ (4)

$+4\ (d_1 = \frac{\ln(\frac{S^X}{PVCK})}{.45\sqrt{4}} + \frac{.45\sqrt{4}}{2})$ (+6, +4) (14)

$S^X = 45 - 25$ (+7) (7)

+1 ⇒ look up N() on tables or using Excel