Problem 1
Value assigned to company = 70
Value prior to discount = 100
Revenues for the firm = 100

Operating margin for firm = 10.00%
Value to Sales Ratio = 1.40
New Estimated Value = 140

Illiquidity Discount = 0.30 - 0.04*(ln(Revenues)) = 11.58%

Value after discount = $123.79

Problem 2
Levered beta = 0.60 (1 + (1-.4)(2)) = 1.32 ! Debt to Equity ratio = 10/5 = 2
Cost of Equity = 5% + 1.32(4%) = 10.28%
Cost of capital = 10.28% (5/15) + 7% (1-.4) (10/15) = 6.23%

Present value of after-tax rental revenue = $8.06 ! After tax rental income = 0.6 million; PV at 6.23% over 30 years
NPV of development = 8.06 - 15 = -$6.94

S = PV of cashflows from development = $8.06
K = Cost of development = 15
\( t = \text{Life of the option} = 30 \)
Standard deviation = 25%
Riskless rate = 5%
Cost of delay = 3.33% ! 1/ Remaining life of lease

Value of option with these inputs =
\[ d_1 = 0.5962 \quad N(d_1) = 0.7245 \]
\[ d_2 = -0.7731 \quad N(d_2) = 0.2197 \]
Value of call option = $1.41