

Name: KEY

Id#

ISE 307, Term 153
ENGINEERING ECONOMIC ANALYSIS

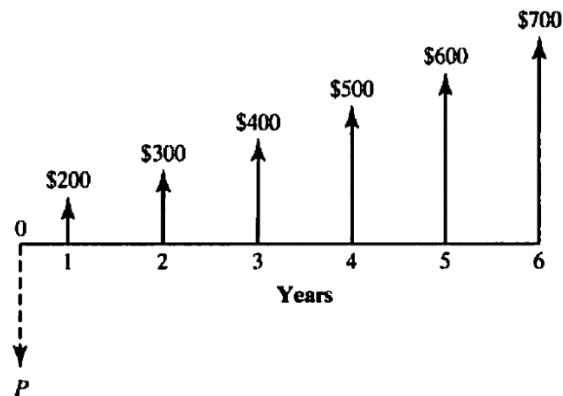
Quiz# 1

Date: Wednesday, July 20, 2016

Q1. List the Fundamental Principles in Engineering Economics.

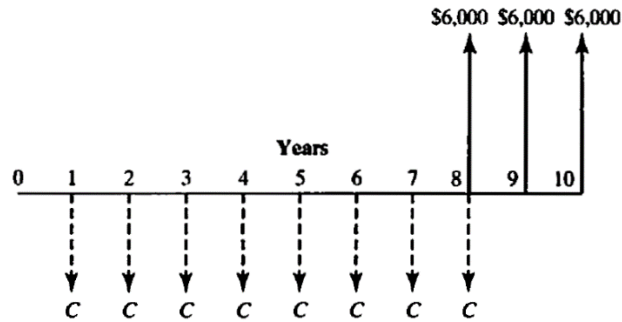
1. An earlier dollar is worth more than a later dollar.
2. All that counts is the difference among alternatives.
3. Marginal revenue must exceed marginal cost.
4. Additional risk is not taken without additional return.

Q2. Compute the value of P for the accompanying cash flow diagram. Assume $i=6\%$ per year.



$$P = A (P/A, i, N) + G (P/G, i, N) = 200*4.9173 + 100*11.4594 \\ = 983.46 + 1145.94 = \$2129.4$$

Q3. From the following cash flow diagram, find the value of C that will establish economic equivalence between the deposit series and the withdrawal series at an interest rate of 8% compounded annually.



$$C (F/A, 8\%, 8) = 6000 (P/A, 8\%, 2) + 6000$$

$$C * 10.6366 = 6000 * 1.7833 + 6000$$

$$C * 10.6366 = 16699.8$$

$$C = 16699.8 / 10.6366 = \$1570.03$$

Another solution:

$$P_8 = 6000 + 6000(1.08)^{-1} + 6000(1.08)^{-2} = \$16699.59$$

$$P_8 = F \rightarrow C = A = (A', i, N) = 16699.59(A/F, 8\%, 8) = 16699.59(0.0940) = \$1569.76$$