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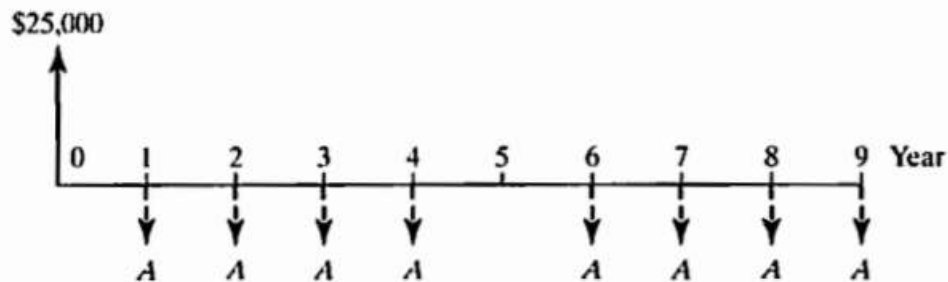
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ISE 307, Term 173  
ENGINEERING ECONOMIC ANALYSIS

Quiz# 1 Solution

Date: Sunday, July 1, 2018

Q1. If you borrow \$25,000 at an interest rate of 6%, compounded annually, with the repayment schedule as shown. what is the amount A? (Note that there is a missing payment in year 5.)



- (a)  $A = \$4,129$
- (b)  $A = \$4,793$
- (c)  $A = \$3,193$
- (d)  $A = \$3,593$

$$A \{ (P/A, 6\%, 9) - (P/F, 6\%, 5) \} = 25,000$$

$$A \{ 6.8017 - 0.7473 \} = 25,000$$

$$A \{ 6.0544 \} = 25,000$$

$$A = 25,000/6.0544 = \$4,129.22$$

**Q2.** The maintenance expense on a machine is expected to be \$5,000 during the first year and to increase \$500 each year for the following ten years. What present sum of money should be set aside now to pay for the required maintenance expenses over the ten-year period? (Assume 8% compound interest per year.).

$$\begin{aligned} P &= A(P/A, i\%, N) + G(P/G, i\%, N) = A(P/A, 8\%, 10) + G(P/G, 8\%, 10) \\ &= 5000 \times 6.7101 + 500 \times 25.977 = \$46539 \quad \text{Ans} \end{aligned}$$