Faculty of Engineering



Final Exam - Jan 2013

1st Year Prod. Engineering

Engineering Economy

Time allowed: 3 hours

Give C.F.D. for each solution.

Prod. Eng. & Mech. Design Dept.

Question 1: If a fund pays 10% compounded annually, what single deposit now will accumulate \$12,000 at the end of the tenth year? If the fund pays 5% compounded annually, what single deposit is required now in order to accumulate \$6000 at the end of the tenth year?

Question 2: An individual deposits \$500, \$1200, and \$2000 at t = 1, 2, and 3, respectively. If the fund pays 8% compounded per period, what sum will be accumulated in the fund at (a) t = 3 and (b) t = 6?

Question 3: Suppose you wanted to become a millionaire at retirement. If an annual compounded interest rate of 8% could be sustained over a 40-year period, how much would have to be deposited yearly in the fund in order to accumulate \$1 million?

Question 4: An individual borrows \$15,000 at 15% compounded annually; he pays off the loan over a 5-year period with annual payments. Each successive payment is \$500 greater than the previous payment. How much was the first payment?

Question 5: Solve Question 4 for the case in which each successive payment is \$500 less than the previous payment.

Question 6: Solve Question 4 for the case in which each successive payment is to be 10% greater than the previous payment.

Question 7: Land is purchased for \$25,000. It is agreed that land will be paid for over a 5year period with annual payments and using a 12% annual compounded interest. Each payment is to be \$2000 greater than the previous payment. Determine the size of the last payment.

Question 8: Solve Question 7 for the case in which each successive payment is \$2000 less than the previous payment.

Question 9: An individual receives an annual bonus and deposits it in a savings account that pays 8% compounded annually. The size of the bonus increases by 10% each year; the initial deposit was \$500. Determine how much will be in the fund immediately after the tenth deposit. أعرجم إله وه لجياول ع الإعاب و تحديد الفتم الى تم البخدام (في كل جدول. ع أنيات الحسب

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