

30

You have 45 minutes to hand in your exam.

ق-1-1-2

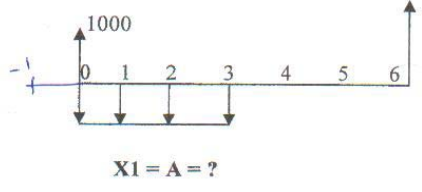
NAME... 00.6.7.14.2... الإسم

SHOW YOUR CALCULATIONS on this sheet

Q1: Find the Equivalent Values (X), (Use $i = 9\%$ per year).

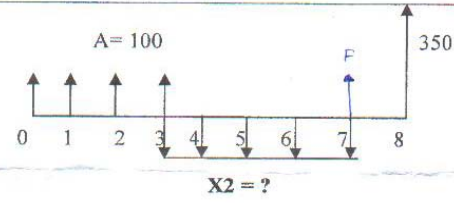
X1 = -958.544, X2 = -1615.14, X3 = +727.19, X4 = 14.73067

12

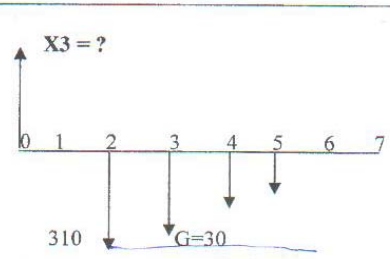


$$\begin{aligned} \text{Eq. } X_1 &= -1000 (P/F, 9\%, 1) (A/P, 9\%, 4) \\ &= -4000 (P/F, 9\%, 7) (A/P, 9\%, 4) \\ &= -958.544 \end{aligned}$$

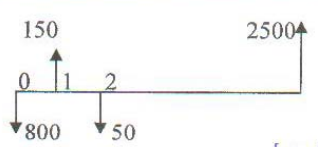
$$[-1000 (F/P, 9\%, 13) - 4000 (P/F, 9\%, 13)] (A/F, 9\%, 14)$$



$$\text{Eq. } X_2 = \left[\begin{aligned} &-100 (F/P, 9\%, 7) \\ &-100 (F/A, 9\%, 13) (F/P, 9\%, 4) \\ &-350 (P/F, 9\%, 11) \end{aligned} \right] (A/F, 9\%, 14)$$



$$\text{Eq. } X_3 = + \left[310 (P/A, 9\%, 14) - 30 (P/G, 9\%, 4) \right] (A/F, 9\%, 1)$$



$$\begin{aligned} \text{Eq. } P &= +800 - 150 (P/F, 9\%, 1) + 50 (P/F, 9\%, 2) \\ &= +704.475 \\ 2500 &= 704.475 (F/P, 9\%, X_4) \end{aligned}$$

X_4	F/P
14	3.3417
X_4	3.5487
15	3.6425

$X_4 = 14.73067$

~~14.73067~~

12 ✓ **Q2:** Circle "T" (for True) or "F" (for False) for each of the following:

A) A nominal 12% interest rate per year compounded quarterly is the same as a 3% per quarter. T F ✓

B) An interest rate of 12% per year compounded continuously is the same as a nominal 1% per month compounded continuously T F ✓

C) An interest rate of 1% per month is the same as an effective 12.683% per year compounded monthly T F ✓

$(1 + 0.01)^{12} - 1$

D) The change in the amount of money over a given time period is called the Time Value of Money. T F ✓

E) To invest JD(1000) for one year at a (6%) compound interest rate, is better than at a (6%) simple interest rate. T F ✓

F) The $(P/A, i\%, N)$ factor equals $N \cdot (P/F, i\%, 1)$ T F ✓

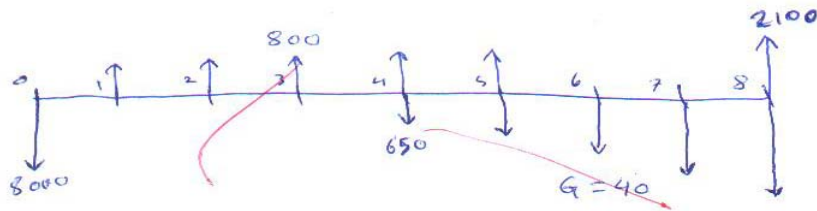


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Q3: Draw the CFD for a project with the following payments:

- Initial Cost = JD 8000;
- Operating Cost, started from the 4th year = JD 650, increased by JD40;
- Annual Income for the first 5 years = JD 800;
- Salvage Value = 2100;

If $n = 8$ years.



GOOD LUCK