

Assignment 1

AI1110: Probability and Random Variables

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Question 2(b)

Let us first bring up the general case.

Let,

- a) Deposit per month be ' d '.
- b) Time(in months) be ' t '.
- c) Total received amount be ' r '.
- d) Total interest be ' i '.
- e) Rate of interest ' I '.

Total Interest would be the Total amount received minus the Total amount deposited, also Rate of Interest per annum would be Total Interest divided by time in years.

$$\therefore i = r - d * t \text{ and } I = \frac{i * 12}{t}$$

Now the values given in the question are:

$d = ₹800$, $t = 18$ (as 1.5 years is equal to $1.5 * 12$ months, i.e 18 months), $r = ₹15,084$.

$$\therefore i = ₹15,084 - ₹(800 * 18)$$

$$\Rightarrow i = ₹15,084 - ₹14,400$$

$$\Rightarrow i = ₹684$$

$$\text{Now } I = \frac{i * 12}{t} \Rightarrow I = \frac{684 * 12}{18}$$

$$\therefore I = ₹456$$

\therefore Rate of interest per annum is ₹456.