

Jender Heart High School, Sec.-33Baw
Class: VIII

Subject: Mathematics

Teacher: Deepthi

Topic: Ch - Simple Interest and Compound Interest

The following concepts will be discussed:

- (i) Principal: The money borrowed for a certain period of time is called principal
- (ii) Interest: The money paid by borrower is called interest.
- (iii) Amount: The total money paid by the borrower is the amount.

$$S.I = \frac{P \times R \times T}{100}, \quad R = \frac{S.I \times 100}{P \times T}$$

$$P = \frac{S.I \times 100}{R \times T}, \quad T = \frac{S.I \times 100}{P \times R}$$

- Here - time is always calculated in years.
To convert months $\longrightarrow$ year (divide by 12)
To convert days $\longrightarrow$ year (divide by 365)
Now, let us start with the exercise questions

Exercise - 8A

Sol's $P = ₹ 25600$, $A = ₹ 35664$, $R = 9\frac{1}{4}\% \text{ p.a}$
 $= \frac{37}{4}\%$, $T = ?$

$$S.I = A - P = 35,664 - 25,600 = ₹ 10,064$$

$$\text{Time} = \frac{S.I \times 100}{P \times R} = \frac{10064 \times 100}{25600 \times 37\frac{1}{4}}$$

$$= \frac{17}{4} = 4\frac{1}{4} = 4 \text{ years } 3 \text{ months}$$

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Topic: Chapter-8

Teacher: Deepu

Soln 1) Let the principal be $\text{₹ } x$, $A = \text{₹ } 1748$, $T = 2\frac{1}{2}$ years,

$$R = 7\frac{1}{2}\% \text{ p.a}$$

$$S.I = \frac{P \times R \times T}{100} = \frac{x \times 15 \times 5}{100 \times 2 \times 2} = \frac{3x}{16}$$

$$A = P + I$$

$$1748 = x + \frac{3x}{16}$$

$$1748 = \frac{16x + 3x}{16}$$

$$1748 = \frac{19x}{16}$$

$$\Rightarrow x = \frac{1748 \times 16}{19} = \text{₹ } 1472$$

Soln 2) Case I

$$P = \text{₹ } x$$

$$I = \frac{x \times 25 \times 211}{100 \times 3 \times 4}$$

$$= \frac{11x}{48}$$

Case II

$$P = \text{₹ } 13500 - x$$

$$I_1 = \frac{(13500 - x) \times 15 \times 3}{100 \times 2 \times 3}$$

$$I_1 = \frac{(13500 - x)}{8}$$

$$I_1 + I_2 = 2375$$

$$\frac{11x}{48} + \frac{(13500 - x)}{8} = 2375$$

$$\frac{11x + 6(13500 - x)}{48} = 2375$$

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$$11x + 81000 - 6x = 2375 \times 48$$

$$5x + 81000 = 114000$$

$$5x = 114000 - 81000$$

$$5x = 33000$$

$$x = \frac{33000}{5} = 6600$$

Soln 23

Case I

$$P = ₹ 42000$$

$$T = 3\frac{1}{2} \text{ yrs.}$$

let the rate be R

$$I_1 = \frac{P \times R \times T}{100} = \frac{42000 \times R \times 7}{100 \times 2}$$

$$= ₹ 1470 R$$

Case - II

$$P = ₹ 55000$$

$$T = 3\frac{1}{2} \text{ yrs}$$

$$I_2 = \frac{P \times R \times T}{100} = \frac{55000 \times R \times 7}{100 \times 2}$$

$$I_2 = ₹ 1925 R$$

$$I_2 - I_1 = 3640$$

$$1925R - 1470R = 3640$$

$$455R = 3640$$

$$R = \frac{3640 \times 100}{455 \times 7} = 8\%$$

Soln 25

Case I

let the principal be x

& Rate be y

$$I_1 = \frac{x \times y \times 3}{100 \times 50} = 960$$

$$xy = \frac{960 \times 50}{3}$$

$$= 16000$$

Case II

$$I_2 = \frac{x \times 6 \times (y+5)}{100} = 2160$$

$$x(y+5) = \frac{2160 \times 100}{6}$$

$$xy + 5x = 36000$$

$$\Rightarrow 16000 + 5x = 36000$$

$$5x = 36000 - 16000$$

$$5x = 20000$$

$$x = ₹ 4000$$