

Name : Fajar Fiaz

Question no. 01

a) Given data:

Sum of three consecutive no = 97

Required =

find the numbers = ?

Solution:

Let the numbers be: $x+2, x+3, x+5$

$$x+2 + x+3 + x+5 = 97$$

$$3x + 10 = 97$$

$$3x = 97 - 10$$

$$\begin{array}{r} 3x = 87 \\ 3 \quad 3 \end{array}$$

$$x = 29$$

The numbers will be:

$$x+2 = 29+2 = 31$$

$$x+3 = 29+3 = 32$$

$$x+5 = 29+5 = 34$$

Verifying the solution:

$$31+32+34 = 97$$

Hence, the answer is correct.

b) Given Data:

Father of my uncle = Grandfather

Daughter of his = Aunt

Son of the aunt = Cousin

Solution:

Hence, the boy is the cousin of
the girl.

c) Given data:

Two dice are thrown simultaneously

Required:

Getting two numbers whose product is even.

Solution:

Probability of any number on dice.

$$6^2 = 36$$

Numbers whose product is even: 26

$$\text{Probability} = \frac{26}{36} = \frac{13}{18}$$

d) Given data:

Average visitors on Sunday = 510

Average visitors on other days = 240

Required:

No. of visitors per day in a month of

Date: _____

Day: _____

30 days beginning with a Sunday = ?

Solution:

Total no. of Sundays = 5

Other days = 25

Average = Sum of values

No. of values

For Sundays,

$$510 = \frac{\text{Sum of values}}{5}$$

$$= 510 \times 5 = 2550$$

For other days,

$$240 = \frac{\text{Sum of values}}{25}$$

$$= 240 \times 25 = 6000$$

$$\begin{aligned} \text{Total no. of visitors} &= 6000 + 2550 \\ &= 8550 \end{aligned}$$

Total average = sum of values
no. of values

$$\text{Average} = \frac{8550}{30}$$

$$= 285$$

Date: _____

Day: _____

Question no. 02

a) Given data:

Loan (Principal amount) = 1200

Rate of interest = no. of years = $R = T$
 $= r \times r = r^2$

Interest paid = 432

Required = Rate of interest = ?

Solution:

Simple Interest (S.I) = $\frac{P \times R \times T}{100}$

$$432 = \frac{1200 \times r^2}{100}$$

$$\frac{432 \times 100}{1200} = r^2$$

$$\sqrt{36} = \sqrt{r^2}$$

$$r = 6 \quad (\text{Rate} = 6\%)$$

Hence, the rate of interest and years
 are 6.

b) Given data:

Selling price = $SP_1 = 1920$
 $= SP_2 = 1280$

Date: _____

Day: _____

Percentage profit = Percentage loss.

Required :

Price at which article be sold to make 25% profit = ?

Solution :

$$\text{Percentage Profit} = \frac{\text{Sale} - \text{Cost}}{\text{Cost}} \times 100 \text{ (i)}$$

$$\text{Percentage Loss} = \frac{\text{Cost} - \text{Sale}}{\text{Cost}} \times 100 \text{ (ii)}$$

Comparing both equations :

$$\frac{\text{Sale} - \text{Cost}}{\text{Cost}} \times 100 = \frac{\text{Cost} - \text{Sale}}{\text{Cost}} \times 100$$

$$\frac{1920 - \text{Cost}}{\text{Cost}} \times 100 = \frac{\text{Cost} - 1280}{\text{Cost}} \times 100$$

$$\frac{(1920 - \text{Cost}) \times 100}{\text{Cost}} = \frac{(\text{Cost} - 1280) \times 100}{\text{Cost}}$$

$$1920 - \text{Cost} = \text{Cost} - 1280$$

$$1920 + 1280 = \text{Cost} + \text{Cost}$$

$$\frac{1600}{2} = \frac{3200}{2}$$

$$\text{Cost} = 1600$$

$$\text{For } 25\% \text{ profit, } \text{Profit \%} = \left(\frac{\text{Sale} - \text{Cost}}{\text{Cost}} \right) 100$$

$$25 = \frac{3 - 1600}{1600} \times 100$$

$$\frac{25 \times 1600}{100} = 3 - 1600$$

Date: _____

Day: _____

$$400 = S - 1600$$

$$400 + 1600 = \text{Sale}$$

$$\text{Sale} = 2000$$

Hence, the article be sold at sale price 2000.

c) Given data,

Present age of a person = $\frac{2}{5}$ of mother (y)

$$x = \frac{2}{5}y \quad (i)$$

After 8 years, $x = \frac{1}{2}y$ i.e.

$$x + 8 = \frac{1}{2}(y + 8) \quad (ii)$$

Putting the value of x from eq(i) into (ii)

$$\frac{2}{5}y + 8 = \frac{1}{2}(y + 8)$$

$$\frac{2}{5}y - \frac{1}{2}y = 8 - 8 \quad \text{Multiplying both sides by '10'; LCM of 2,5:}$$

$$\frac{4}{10}y - \frac{5}{10}y = 0 \quad 10 \times \frac{2}{5}y + 8 \times 10 = 10 \times \frac{1}{2}(y + 8)$$

$$4y + 80 = 5y + 40$$

$$80 - 40 = 5y - 4y \Rightarrow y = 40$$

Hence, the present age of mother is 40.

d) Given data,

Profit-share of three = 5 : 7 : 8

Partenered for = 14, 8, 7 months

Required, Ratio of investments = ?

Solution, A : B : C

5 : 7 : 8

Dividing by no. of months,

5 : 7 : 8

14 8 7

Taking LCM of 14-8-7 which is, 56

Multiplying all by 56:

$$\frac{56 \times 5}{4} : \frac{56 \times 7}{8} : \frac{56 \times 8}{7}$$

$$20 : 49 : 64$$

$$\begin{array}{r} 7 | 14-8-7 \\ 2 | 2-8-1 \\ 1 | 1-4-1 \\ 2 | 1-2-1 \\ 1 | 1-1-1 \\ \hline 14 \\ \hline 4 \\ \hline 56 \end{array}$$

Hence, the ratio of their investments

is 20 : 49 : 64.