Question no 1

A) Sum of three consecutive prime number is 97. Find the number

Prime numbers are those numbers which are divided by themselves only or 1

Let us consider numbers as x, y, z

According to the question $x + y + z = 97$

If we divide 97 by 3 then ≈ 32 we get

Let us find nearest prime numbers near 32

$$29 + 31 + 37 = 97$$

So, the numbers are 29, 31, 37 (consecutive and prime

B) Introducing a boy, a girl said. "He is the son of the daughter of the father of my uncle."
How is the boy related to the girl.

→ father of her uncle is her grandfather
→ Similarly, her uncle is brother of her parents
→ Daughter of her grandfather is her mother
→ or aunt
→ Son of the daughter of her grandfather her brother or her cousin

Stand intrepretation is he is her brother not cousin because not mentioned clearly

BROTHER

C) Two dice are thrown simultanously. What is the probability of getting two numbers whose product is even?

1 dice has six sides so 2 dices have twelve sides.

If we multiply both $6 \times 6 = 36$

Odd numbers on each die are 3 {1, 3, 5}

$3 \times 3 = 9$

we are finding even outcome

Substract $36 - 9 = 27$ posibilities are there

$36 \longrightarrow$ total sides

$27 \longrightarrow$ posibilities

$$\frac{36}{27} \Rightarrow \frac{4}{3}$$

$$\frac{27}{36} = \frac{4}{3}$$

D) A library has an average of 510 visitors on Sunday and 240 on other days. The average number of visitors per day in a month of 30 day beginning with sunday is?

Month is starting with sunday

So 5 Sundays are there on dates 1,8,16,24,30 and 25 other days.

visitors on sunday $510 \times 5 = 2550$

visitors on other days $240 \times 25 = 6000$

total visitors per month are $2550 + 6000 = 8550$

$$\frac{8550}{30} = 285 \text{ visitors per day}$$

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Question no 2

A) Saqib took a loan of Rs.1200 with Simple interest for as many years as the rate of interest. If she paid Rs. 432 as interest at the end of the loan period. Find rate of interest.

Available data is

principle = 1200, Interest = 432, time = rate

putting simple interest formula

$$S.I = \frac{PRT}{100}$$

Since time is equal to interest rate

$$S.I = \frac{PRR}{100}$$

$$S.I = \frac{1200 \times \lambda \cdot \lambda}{100} \quad = S.I = 12 \times \lambda^2$$

$$432 = 12\lambda^2 \quad \therefore \quad \frac{4\overset{36}{3}2}{12} = \lambda^2 \quad \therefore \quad 36 = \lambda^2$$

$$\lambda = 6$$

$$\underline{S.I = 6\%}$$

B) The percentage profit earned by selling an article for Rs. 1920 is equal to the percentage loss incurred by selling the same article for Rs.1280. At what price should be article be sold to make 25% profit?

D) Three partners shared the profit in a business in the ratio 5:7:8. They had partn-ered for 14 months. 8 months and 7 months respectively. what was the ratio of their invest-ment?

Three partners are a, b, c = 5:7:8

$a = 5 : b = 7 : c = 8$

partnership duration

$$\frac{5}{14}, \frac{7}{8} : \frac{8}{7} .$$

Lcm is 56 here

For counting the share of investment

$$\frac{5}{14} \times 56 = 20$$

$$\frac{7}{8} \times 56 = 49$$

$$\frac{8}{7} \times 56 = 64$$

20 : 49 : 64   Is the final ratio

e) A person's present age is two-fifth of the age of his mother. After 8 years, he will be one-half of the age of his mother. How old is the mother at present.

Let mother's present age is = M

Person's present age $= \frac{2}{5}$ M :. after 8 years

$$\frac{\frac{2}{5}M + 8}{M + 8} = \frac{1}{2} \quad \text{', Cross multiplication}$$

$M + 8 = 2(\frac{2}{5}M + 8)$ ↳ $M + 8 = \frac{4}{5}M + 16$:. by taking 4 common

$\frac{1}{5}M + 8$:. $\frac{1}{5}M = 8$ ↳ $M = 8 \times 5$:. $M = 40$

Mother age present = 40