

Question No#01

A)

Let those three consecutive prime numbers are

$$P_1, P_2, P_3$$

Given

$$P_1 + P_2 + P_3 = 97$$

$$\text{Average} = \frac{P_1 + P_2 + P_3}{3}$$

$$= \frac{97}{3}$$

$$\approx 32.33$$

$\Rightarrow$

The number will be around 32.

$\Rightarrow$ The prime numbers near to 32 are

$$23, 29, 31, 37, 41$$

$\Rightarrow$ We can see

$$29 + 31 + 37 = 97$$

So, those prime numbers are

$$29, 31, 37.$$

(10)

Given

The no of visitors on Sunday = 510

The " " on other days = 240

Total days in month 30.

The month begins with a Sunday

How many Sundays in a month?

1, 8, 15, 22, 29

Total 5 Sune

Total Sundays = 5

Visitors on Sunday = 510×5
= 2550

Month days without Sunday
= $30 - 5$
= 25

visitors on other days = 25×240
= 6000

//_:hr

$$\text{Total visitors in a month} = 2550 + 6000$$

$$= 8550$$

Average visitors per day

$$= \frac{\text{Total visitors}}{\text{No of day}} = \frac{8550}{30}$$

$$= \frac{2550}{30} = 285$$

c)

The sample space will be

	1	2	3	4	5	6
1	(1,1)	(1,2)	(1,3)	(1,4)	(1,5)	(1,6)
2	(2,1)	(2,2)	(2,3)	(2,4)	(2,5)	(2,6)
3	(3,1)	(3,2)	(3,3)	(3,4)	(3,5)	(3,6)
4	(4,1)	(4,2)	(4,3)	(4,4)	(4,5)	(4,6)
5	(5,1)	(5,2)	(5,3)	(5,4)	(5,5)	(5,6)
6	(6,1)	(6,2)	(6,3)	(6,4)	(6,5)	(6,6)

_ _ 1 _ 1 _ 36

Sample space = 36

Probability of getting = $\frac{27}{36}$
even Product no's

$$\Rightarrow \frac{9}{12}$$

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

B)

The Girl who introduce boy.
The Boy was the son of
daughter of her grandfather

The mother of boy was
the girl's aunt.
So ultimately

The boy was girl's cousin

Question #03

A) A can complete work in days = 15 days
B " " = 20 days
They work together for 4 days.

we have to find

The fraction of the work = ?

The work of A in 1 day = $\frac{1}{15}$
" B " = $\frac{1}{20}$

∴ A and B work together = $\frac{1}{15} + \frac{1}{20}$

The one day work together = $\frac{4+3}{60} = \frac{7}{60}$

∴ The 4 day work together = $4 \times \frac{7}{60}$
 $= \frac{7}{15}$

Since

Total work = 1

work done = $\frac{7}{15}$

∴ The work left = $1 - \frac{7}{15} = \frac{8}{15}$

B)

Given

Two no's in ratio = $3:5$ — (1)

After subtracting 9,

the new ratio becomes = $12:23$ — (2)

we can write (1) as

$$3x : 5x$$

$$\because a:b = ax:bx \\ \rightarrow \textcircled{C}$$

By subtracting 9, and using eq (2)

$\Rightarrow$

$$3x-9 \text{ and } 5x-9$$

$\Rightarrow$

$$3x-9 : 5x-9 :: 12:23$$

$\Rightarrow$

$$\frac{3x-9}{5x-9} = \frac{12}{23}$$

By cross multiplication

$$\Rightarrow 23(3x-9) = 12(5x-9)$$

$\Rightarrow$

$$69x - 60x = 207 - 108$$

$$\Rightarrow \boxed{x=11}$$

By Putting the value of x in eq (C)

The original no's are 33, 55

Hence

$$\boxed{\text{Smaller no} = 33}$$

c)

Given

Average of A, B, C

$$= \frac{A+B+C}{3} = 45 \text{ kg}$$

$$\Rightarrow A+B+C = 45 \times 3 = 135 \text{ kg}$$

$$\boxed{A+B+C = 135} \quad \text{--- (1)}$$

Average of A, B

$$\frac{A+B}{2} = 40 \text{ kg}$$

$$\Rightarrow \boxed{A+B = 80 \text{ kg}} \quad \text{--- (2)}$$

Average of B, C

$\Rightarrow$

$$\frac{B+C}{2} = 43 \text{ kg}$$

$$\Rightarrow \boxed{B+C = 86 \text{ kg}} \quad \text{--- (3)}$$

Subtracting eq (2) from eq (3)

$$\Rightarrow (B+C) - (A+B) = (86 - 80) \text{ kg}$$

27

$$\boxed{CA = 6} \rightarrow (4)$$

Now, ~~we have to find~~

from eq (1)

$$A + B + C = 135$$

and from eq (2) and eq (3)

$$(A + B) + (B + C) = 80 + 86 = 166$$

27

$$A + 2B + C = 166 \rightarrow (5)$$

Subtracting eq (4) from eq (5)

$$(A + 2B + C) - (A + B + C) = 166 - 135$$

$$\cancel{A} + 2\cancel{B} + \cancel{C} - \cancel{A} - \cancel{B} - \cancel{C} = 31$$

$$\boxed{B = 31}$$

27

$$\boxed{B = 31 \text{ kg}}$$

D) 1.

The sequence has ~~cons~~ two consecutive no then there product no, the the remaining two consecutive no and their product no pattern. like

(2, 3, 6), (4, 5, 20), (?, 3, 18)

2)

missing no is 6.

2, 3, 6, 4, 5, 20, **6**, 3, 18

2-

1, 3, 9, 15, 25, —, 49

4

the difference is 2, 6, 6, 10—

so the next difference will be 4

2) 10 + 4

= 14

2) 25 + 14 = 39

2) 1, 3, 9, 15, 25, **39, 49**

3- 2, 7, 10, 22, 18, 37, 26, 22

↓ ↓ ↓ ↓ ↓ ↓
+5 +3 +12 -4 +19 -11

positive diff - (5, 12, 19) increment +7

-ve diff = (-3, -4, -11) inc. by -7

2) The next no will be 19 + 7 = 26

2)

The increment of $19+1=20$

The missing no will be .

$$26+26=52$$

2)

2, 7, 10, 22, 18, 37, 26, **52**

c)

34, 7, 37, 14, 40, 28, 43, ??

2) (34, 37, 40, 43), (7, 14, 28,)

↓
3

7

~~14~~

∴ 34, 7, 37, 14, 40, 28, 43, **56**

5-

5, 7, 11 → 17, 19

2)

This is sequence of prime numbers.

2)

5, 7, 11, **13**, 17, 19