Iqra Shoukat
Test#3
GSA

__/__/__

Question No#01

A)

let those three consecutive prime numbers are

P_1, P_2, P_3

Given

$P_1 + P_2 + P_3 = 97$

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

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

$$\approx 32.33$$

⇒ The number will be around 32.

⇒ The Prime numbers near to 32 are

~~23~~, 23, 29, 31, 37, 41

⇒ we can see

$29 + 31 + 37 = 97$

So, those prime numbers are 29, 31, 37.

(b)

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 Sun~~

Total Sundays = 5

Visitors on Sunday = 510 × 5

= 2550

Month days without Sunday

= 30 - 25

= 25

visitors on other days = 25 × 240

= 6000

Total visitors in a month = 2550 + 6000

= 8550

Average visitor per day

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

$= 285$.

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)

Sample space = 36

Probability of getting even Product no's $= \frac{21}{36}$

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

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

B)

The Girl who introduce Boy.
The Boy was the Son of daughter of her grand father

The mother of boy was the girls aunt.
So ultimately

The boy was girls 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 by = $\frac{4+3}{60} = \frac{7}{60}$

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

$= \frac{7}{15}$

Since

Total work = 1

work done = 7/15

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

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

$3x : 5x$ $\because a:b = ax:bx$ → (3)

By subtracting 9 and using eq (2)

$\Rightarrow$

$3x-9$ 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 (3)

The original no's are 33, 55

Hence

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 eqn (2) from eqn (3)

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

$\Rightarrow$ $\boxed{C - A = 6}$ $\rightarrow$ (4)

Now, ~~we have to find~~

from eq (1)

$A + B + C = 135$

and from eq (2) and eq (3)

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

$\Rightarrow$

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

Subtracting eq (1) from eq (5)

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

$A + 2B + C - A - B - C = 31$

$\boxed{B = 31}$

$\Rightarrow$

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

D) 1-

The sequence has two consecutive no then their product no, the the remaing two consetive no and their Product no Pattern. like

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

=>

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 differe will be 14

=> 10+4

= 14

=> 25 + 14 = 39

=> 1, 3, 9, 15, 25, 39, 49

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

+5 -3 +12 -4 +19 -11

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

-ve differe = (-3, -4, -11) incre. by -7

=> The next no will be 19 - 7 = 26

The increment of 19-7=26

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

3) 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