

MATHEMATICS

MARTA WAHEED

Mock 2:

(A)

① Find the missing term?

(a) 3, 9, 21, 39, 63 _____

$$3 - 9 = +6$$

$$9 - 21 = +12$$

$$21 - 39 = +18$$

$$39 - 63 = +24$$

$$63 - ? = +30$$

$$63 - 93$$

$$\begin{array}{r} 63 \\ 30 \\ \hline 93 \end{array}$$

93 with a series of +6.

(b) 1, 5, 11, 21, 37 _____

$$1 - 5 = +4$$

$$5 - 11 = +6$$

$$11 - 21 = +10$$

$$21 - 37 = +16$$

$$37 - ? = +8$$

$$37 - 61$$

$$\begin{array}{r} 37 \\ 24 \\ \hline 61 \end{array}$$

61 with a series of adding 2.

(c) 5, 16, 29, 46, 65, 88 _____

$$\begin{array}{ccccccccc} 5 & 16 & 29 & 46 & 65 & 88 & 117 \\ \hline & +11 & +13 & 17 & 19 & 23 & 29 \end{array}$$

Series of Prime Number from 1 - 29.

(d) 1, 3, 4, 9, 27, 36, 243 - 972

⇒ 1, 3, 9, 27, 243 These are powers of 3.

$$3^0, 3^1, 3^2, 3^3, 3^5$$

⇒ 4, 36, — 972.

$$\begin{array}{ccc} \downarrow & \downarrow & \downarrow \\ 4 \times 1, & 4 \times 9 & 4 \times 243 \end{array}$$

$$27 \times 4 = 108$$

Multiply with 4. 108

② Code Language

K	R	+7	P	W	+7
E	R	+13	A	N	+13
N	G	+19	N	G	+19
W	W	0	A	A	0
O	I	+20	S	M	+20
O	C	+14	O	C	+14
D	L	+8	N	V	+8
			I	P	+7
			C	P	+13

③ A, B, C, D and E

A, B, C, D, E

A - B

C - D

D x E

1, 2, 3, 4, 5

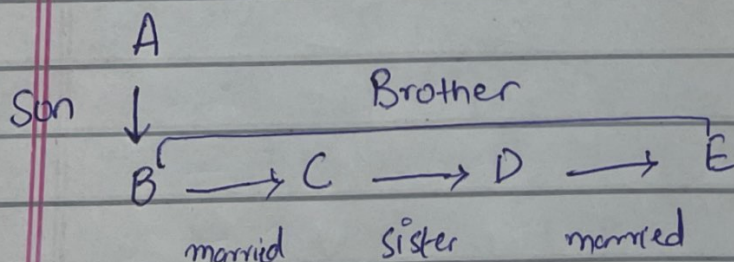
B E A C D

sitting together

SO A is in the middle of 5
between E and C.

EAC

④ A's son B



SO D is the daughter-in-law of A and
the wife of A's son E.

(B)

Father is aged three times.....

(1)

$$\text{Rashid} = x$$

$$\text{Father} = 3x \text{ year}$$

After 8 years

$$\text{Rashid} = x + 8$$

$$\text{Father} = 3x + 8$$

Father age would be 2.5 time of Rashid's age

(4)

$$(3x + 8) = 2.5(x + 8)$$

$$2.5$$

$$\times 8$$

$$20.0$$

$$3x + 8 = 2.5x + 20$$

$$3x - 2.5x = 20 - 8$$

$$0.5x = 12$$

$$0.5$$

$$10$$

$$\Rightarrow \frac{8}{10}$$

$$\frac{8}{10} \times 2$$

$$\frac{x}{2} = 12$$

$$x = 2 \times 12$$

$$x = 24$$

Rashid's Present age = 24

$$\text{After 8 years} = \text{Rashid's} = 24 + 8 = 32$$

$$\text{Father} = 3(24) + 8 = 80$$

$$\text{After another 8 years} = R = 32 + 8 = 40$$

$$F = 80 + 8 = 88$$

$$\text{How many times older will be father} = \frac{88}{40} = \boxed{2.2}$$

Father will be 2.2 times Rashid's age.

③

A bus start

City x from where start travelling.

$$W = \frac{M}{2}$$

In City y - 10 men leaves

5 women enter

So As men = women

$$\text{So } M - 10 = \frac{M}{2} + 5$$

$$M - \frac{M}{2} = 5 + 10$$

$$= \frac{2M - M}{2} = 15$$

$$\frac{M}{2} = 15$$

$$M = 2 \times 15$$

$$M = 30 \quad \text{So there was 30 men.}$$

$$\text{As women} = \frac{M}{2} = \frac{30}{2} = 15$$

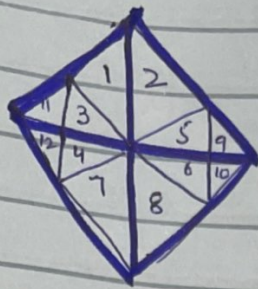
Men + women

$$30 + 15$$

$$= \underline{45 \text{ passengers}}$$

④

Find the total number of Triangles?



4 → larger triangles

4 → smaller

4 → medium

$$(11+12)(3+4) = 1+1 \text{ triangle} = 2$$

$$(9+10)(5+6) = 1+1 \text{ triangle} = 2$$

So total

$$4+4+4+1+1+1+1$$

So Total there are **16**

triangles.