

Q6

Solution to Q6a

i) 10, 100, 200, 310, —.

The above numeric series follows a pattern difference of +90, +100, +110, ... so on.

So as per the pattern, missing number in the series would be $310 + 120 = 430$

The series would be.

10, 100, 200, 310, 430.

ii) 3, 7, 23, 95

The above numeric series of Natural numbers starting from 3, is obtained by multiplying with 2 and adding 1 for the first term, multiplying with 3 and adding 2 for the second term, and multiplying the previous number with 4 and adding 3 for the third term.

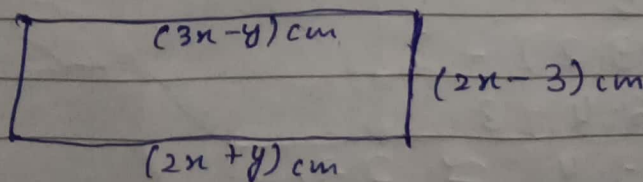
Following above pattern, the next number in series would be

$$95 \times 5 + 4 = 479$$

So, the series would be:

3, 7, 23, 95, 479.

Solution of Q6b



Perimeter = 114

Area = ?

$$\because \text{Perimeter} = 2(L+W)$$

$$114 = 2[(3x-y) + (2x-3)]$$

$$\frac{114}{2} = 3x + 2x - y - 3$$

$$57 + 3 = 5x - y$$

$$5x - y = 60 \quad \text{--- (1)}$$

\because opposite sides are equal in a rectangle

$$\because L_1 = L_2$$

$$3x - y = 2x + y$$

$$3x - 2x = y + y$$

$$x = 2y \quad \text{--- (2)}$$

putting (2) in (1)

$$5(2y) - y = 60$$

$$10y - y = 60$$

$$9y = 60$$

$$y = \boxed{6.6 \text{ cm}} \quad \text{(3)}$$

put (3) in (2)

$$x = 2(6.6)$$

$$\boxed{x = 13.2}$$

Now, $A = L \times W$

$$W = 2x - 3$$

$$= 2(13.2) - 3$$

$$= 26.4 - 3$$

$$\boxed{W = 23.4 \approx 23 \text{ cm}}$$

$$L = 3x - y$$

$$= 3(13.2) - y$$

$$L = 39.6 - 6.6$$

$$\boxed{L = 33 \text{ cm}}$$

so,

$$\therefore \text{Area} = L \times W$$

$$= 33 \times 23$$

$$\boxed{\text{Area} = 759 \text{ cm}}$$

∴ The area of rectangle would be 759 cm.

Solution to Q6c

$$\text{Let Rohan's age} = x$$

$$\text{Nisha's age} = x + 15 \text{ --- (1)}$$

$$\text{past} = 3 \text{ year}$$

so,

$$\text{Rohan's age} = 3 \times \text{Nisha's age}$$

$$3(x-3) = 3(x+15-3)$$

$$3(x-3) = 3(x+12)$$

$$3x-9 = 3x+36$$

$$3x-x = 30+9$$

$$2x = 39$$

$$x = 39/2$$

$$x = 19.5 \approx 20$$

Now, from (1)

$$\text{Nisha's present age} = x + 15$$

$$= 20 + 15$$

$$\boxed{\text{Nisha's age} = 35 \text{ years}}$$

Ans

Ans to Q 6 d

Data

Oranges = 210

Apples = 252

pears = 294

To find

Biggest possible no. of cartons.

Sol:

Calculating the common factors:

Oranges = 210 = $2 \times 3 \times 5 \times 7$

Apples = 252 = $2 \times 2 \times 3 \times 3 \times 7$

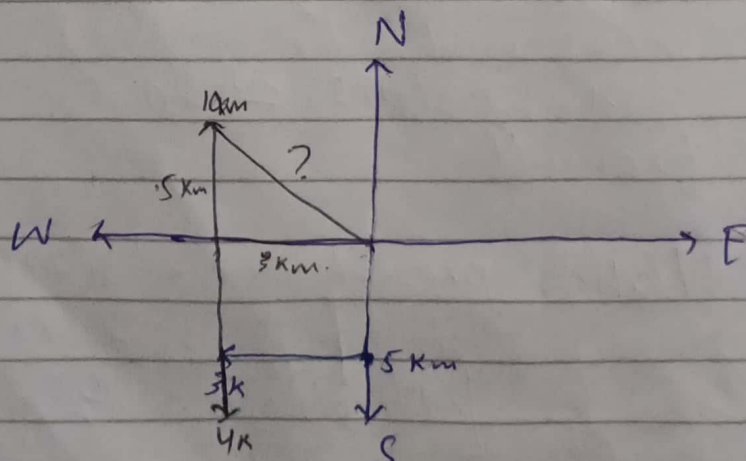
pears = 294 = $2 \times 3 \times 4 \times 7$

Now multiplying the greatest common factors in all no. of fruits

Biggest possible cartons = $2 \times 3 \times 7$
= 42

Ans

Solution to Q 8a



Using Pythagorean theorem

$$\text{Hyp}^2 = (3)^2 + (5)^2$$

$$= 9 + 25$$

$$\sqrt{\text{Hyp}^2} = \sqrt{34} \text{ km}$$

$$\text{Hyp} \approx 8 \text{ km}$$

The direction of the man will be towards North and he is approximately 6 km from starting point.

Solution Q8(b)

First five consecutive prime numbers are
2, 3, 5, 7, 11

To find Mean,

$$\begin{aligned} \therefore \text{Mean} &= \frac{\text{Sum of observations}}{\text{Number of observations}} \\ &= \frac{2+3+5+7+11}{5} \end{aligned}$$

$$= \frac{28}{5}$$

$$= 5.6$$

$$\approx 6$$

So, the arithmetic mean of first five consecutive prime numbers is 6.

Let x be the no. of days with 70 men.

Solution to Q8(c)

Using Arrow Method

Men	length	Days
50	20 ↑	20 ↑
70	50 ↑	$x = ?$ ↑

So,

$$\frac{x}{20} = \frac{20}{20} \times \frac{50}{70}$$

$$x = \left(\frac{5}{7}\right) 40$$

$$x = 200/7$$

$$x = 28.5 \text{ days}$$

Hence it will take 28.5 days to complete 20km road with 70 men.

Solution to Q8(d)

Data

$$\text{Total worth} = \text{Rs } 1,750,000$$

$$\text{Debt} = \text{Rs } 150,000$$

$$\text{Rest} = 1,750,000 - 150,000$$

$$\text{Rest} = \text{Rs } 1,600,000$$

Son : Daughter

$$2 : 1$$

$$2 + 1 = 3 \text{ parts}$$

$$\text{Son's share} = \frac{2}{3} (1,600,000)$$

$$= \text{Rs } 1,066,667$$

$$\text{Daughter's share} = \frac{1}{3} (1,600,000)$$

$$= \text{Rs } 533,333$$

Solution to Q7(a)

let x = original price

after accidentally raising 20% = $x + 80$

$$\frac{20}{100} (x) = 80$$

$$\frac{1}{5} x = 80$$

$$x = 400 \text{ rupees}$$

Original price of the shirt was 400 rupees.

Solution to Q7(b)

BROTHER \rightarrow O D G S N A

SISTER \rightarrow O D S R H R

Solution to Q7(c)

Total slices = 8

Slices with raisins = 3

$$\therefore P = \frac{3}{8}$$

Probability of Shiza picking a slice containing raisin is $\frac{3}{8}$.