

SECTION 2

Q. 6:-

(ONLY MATH PORTION)

a) Given Data:

Candies Ratio = 3 : 6 : 2 : 5

Apple = $3x$

Berry = $6x$

Cherry = $2x$

Date: $5x$

→ Apple candies exceed date by 35.

SOLUTION:-

Apple candies exceed:

Mathematically:-

$$3x - 5x = 35$$

$$-2x = 35$$

$$x = -17.5$$

(-ve does not matter)

$$\boxed{x = 17.5}$$

Berry's proportion = $6x$

Total Berry candies = 6×17.5

" " " = 105 candies Ans

17
6
102

b)

GIVEN Data:-

Camare's Original price = 200 \$

Discount percentage = 25%.

Tax percentage = 6%.

Total Amount to be paid = ?

SOLUTION:-

First find the discount:-

$$\Rightarrow \text{Discount} = \text{Org Price} \times \frac{25}{100}$$

$$\text{Discount} = 200 \times \frac{25}{100} \Rightarrow 2 \times 25$$

$$\boxed{\text{Discount} = 50 \$}$$

$$\Rightarrow \text{Discounted Price} = (200 - 50) \$$$
$$= 150 \$$$

$$\Rightarrow \text{Tax} = \text{Discounted Price} \times \frac{6}{100}$$

$$\text{Tax} = 150 \times \frac{6}{100} = 9 \$$$

$$\Rightarrow \text{Final Price to be paid} = (150 + 9) \$$$

$$\boxed{\text{Final Price to be paid} = 159 \$} \text{ Ans}$$

c) GIVEN Data:-

Total Distance = 36 km

Speed = 18 km/hr

Start Time = 1 pm

Reaching (End) Time = ?

SOLUTION:-

Hours required to cover 36 km

@ 18 km/hr :-

$$\Rightarrow \text{Time Req.} = \frac{36 \text{ km}}{18 \text{ km/hr}} = 2 \text{ hr}$$

$$\Rightarrow \text{End Time} = 1 \text{ pm} + 2 \text{ hr}$$

$$\boxed{\text{Reach Time} = 3 \text{ pm}} \text{ Ans}$$

d)
i)

$\Rightarrow$ STATISTICS

ii)

$\Rightarrow$ GAMBLER & GAMBLER

Q. 7:-

a) Given Data:-

Diameter of Sphere = 14 cm

$$\pi = \frac{22}{7}$$

Volume of Sphere = ?

Solution:-

$$\Rightarrow \text{Radius of Sphere} = \frac{\text{Diameter}}{2}$$

$$\text{Radius} = \frac{14 \text{ cm}}{2} = 7 \text{ cm}$$

$$\Rightarrow \text{Volume of Sphere} = \frac{4}{3} \pi r^3 \quad \text{--- (1)}$$

Putting values of π, r in (1):-

$$\text{Volume} = \frac{4}{3} \times \frac{22}{7} \times 7^3$$

$$\text{Volume} = \frac{4}{3} \times 22 \times 49 = \frac{4312}{3}$$

$$\text{Volume} = \frac{4312}{3} \text{ cm}^3 \text{ OR } 1437.33 \text{ cm}^3 \quad \text{Ans}$$



b)

GIVEN Data:-

$$\text{Total Savings} = 25000 \text{ Rs}$$

$$\text{Ratio of Shares} = 1:2:3:4:5$$

$$\text{Smallest Share} = ?$$

SOLUTION:-

$$\Rightarrow \text{Total Shares} = (1+2+3+4+5)x \\ = 15x$$

So, we can say:

$$15x = 25000 \text{ Rs}$$

Finding x :

$$x = \frac{25000}{15}$$

$$x = 5000 / 3 \approx 1666.7 \text{ Rs}$$

$\therefore$ The smallest share is $1x$
which equal 1666.7 Rs. (Ans)

$$\begin{array}{r} 1666 \\ \times 3 \\ \hline 5000 \end{array}$$

c)

Series:-

i)

Relation 1

2	,	6	,	18	,	54	,	162	,	486
		$\swarrow 3\times$		$\swarrow 3\times$		$\swarrow 3\times$		$\swarrow 3\times$		$\swarrow 3\times$

There is no error in the series.

ii)

3, 5, 7, 11, 13, —

The next digits in the series will be 17, 19, 23--

So, $\rightarrow$ 3, 5, 7, 11, 13, 17, 19, 23 — so on

d)

GIVEN Data:-

Triangle with sides = 5cm, 12cm, 13cm

All three angles = ?

SOLUTION:-

Sides :- $a = 5\text{cm}$, $b = 12\text{cm}$, $c = 13\text{cm}$

Angles:-

A opposite to $a = ?$

B " " $b = ?$

C " " $c = ?$

Checking for right angle Δ :-

$$c^2 = a^2 + b^2$$

$$13^2 = 5^2 + 12^2 \Rightarrow 169 = 25 + 144$$

$$169 = 169 \Rightarrow \text{Right angle Triangle}$$

Now find Angles:-

$$\text{Angle } C = 90^\circ$$

$$\text{Angle } A = \sin^{-1}\left(\frac{a}{c}\right)$$

$$\angle A = \sin^{-1}\left(\frac{5}{13}\right) = 22.6^\circ$$

$$\text{So, } \angle A = 22.6^\circ$$

$$\text{Now, } \angle B = 180^\circ - 90^\circ - 22.6^\circ$$

$$\angle B = 67.4^\circ$$

$$\text{Hence, } \angle A = 22.6^\circ, \angle B = 67.4^\circ, \angle C = 90^\circ$$