Q. No. 6

a. In a bag, there are a certain number of toy-blocks with alphabets A, B, C and D written on them. The ratio of blocks A : B : C : D is in the ratio 4 : 7 : 3 : 1. If the number of 'A' blocks is 50 more than the number of 'C' blocks, what is the number of 'B' blocks?

b. A pair of shoes originally cost is 80$. If there is a 15% discount and 10% sale tax applied. What is the final price?

c. A train travels 42km between two stops at average of 36km/hr. If train departs at 4pm.When does the train arrive?

d. Arrange the jumbled words:

i. teninsuperted   ii. hweti

Q. No. 7

a. Find the volume of a cylinder with radius 30 cm and height 1m.

b. The average age of three boys is 15 years. If their ages are in the ratio 3:5:7, what is the age of the youngest boy?

c. Identify the series:

i. 8, 19, 52, 151, 447, ___. (What is wrong number in this series?)

ii. 11, 13, 17, 19, 23, ___.

d. If a triangle has sides of 5cm, 4cm and 6cm.What will be each angle?

Q. No. 8

a. A man travels over the path of a right-angle triangle having base and hypotenuse 4 and 5 kilometers, respectively. After a complete round he continues in the same direction for 6 km and then turns at 90 degree and continues for another 8km.How long he has travelled and how far he is from his starting point?

b. Hassan, Ali, Akbar, Nasir and Shahbaz are classmates having different pocket money. Hassan's pocket money is one third as much as of Ali and Ali has five times as much as Akbar. Akbar has thrice as much as Nasir and Shahbaz gets equal to Nasir and that of Ali. If they get Rs. 8000 then find the pocket money of each.

c. What will be the surface area and volume of a sphere if it has radius of 7m?

d. Distribute Rs. 4320 among Zain, Aslam and Ashraf in such a way that if Zain gets 2 parts then Aslam gets three parts, whereas Ashraf gets seven parts.

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We wish you Good Luck for CSS 2025

Section-II

Q.No. 6 :

a.

solution:

The given ratio of blocks A:B:C:D is 4:7:3:1.
let the number of blocks A, B, C and D are 4x, 7x, 3x and x respectively.

No of A blocks = 50 + No of C blocks   (given)

$\Rightarrow$ 4x = 50 + 3x

4x - 3x = 50

x = 50

The number of B blocks = 7x

= 7(50)

= 350 Ans

b.

solution :

Orignal cost of shoes = 80$

discount = 15% (80$)

$\Rightarrow$ discount = $\frac{15}{100}$ (80)

$\Rightarrow$ discount = 12$

Tax applied = 10% (80) $

⇒ tax = $\frac{10}{100}$(80)

tax = 8$

Total price = Original price - discount price + tax price

final price = 80$ - 12$ + 8$

" = 76$

c.

Solution :

distance b/w two stops = 42km

average ~~velocity~~ speed of train = 36 km/hr

speed = $\frac{distance}{time}$

36 km/hr = $\frac{42 km}{time}$

time = $\frac{42 km}{36 km/hr}$

Time = 1.27 hr

Time = 1.17 × 60 minutes

Time = 70 minutes = 1 hr 10 minutes

So the train takes 1 hour and 10 minutes to reach other station. Therefore, the train will reach at 5:10pm as it departs at 4pm.

d-

Solution : (i) teninsuperted

(ii) hweti

White

Q. NO. 7 :

a-

solution :

Radius of cylinder = r = 30cm

$$r = \frac{30}{100} m = 0.3m$$

height of cylinder = h = 1m

Volume of cylinder = v = $\pi r^2 h$

$$= (3.14)(0.3)^2(1)$$

$$= (3.14)(0.9)$$

$$v = 2.826$$

b-

solution :

average age of three boys = 15 yrs

ratio of their ages is 3:5:7

let the ages of three boys be 3x, 5x, 7x.

$$avarege = \frac{sum\ of\ ages\ of\ boys}{No\ of\ boys}$$

$$15 = \frac{3x+5x+7x}{3}$$

$$45 = 15x$$

$$3 = x$$

The age of youngest boy is $3x = 3(3) = 9$ yrs.

C.

(i) : 8, 9, 15, 52, 151, 447, ...

(ii) : 11, 13, 17, 19, 23, ...

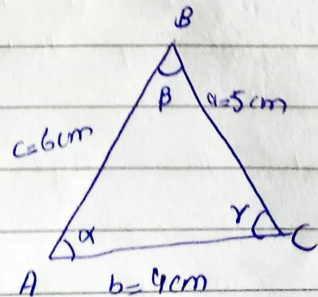It is a series of prime number starting from 11 and onwards.

d.
Solution:

Let a, b and c be the sides and α, β, γ be the angles of triangle.

$a = 5$ cm

$b = 4$ cm

$c = 6$ cm

Using Law of cosine

$$a^2 = b^2 + c^2 - 2bc \cos\alpha$$

$$(5)^2 = (4)^2 + (6)^2 - 2(4)(6)\cos\alpha$$

$$25 = 16 + 36 - 48\cos\alpha$$

$$48\cos\alpha = 52 - 25$$

$$48\cos\alpha = 27$$

$$\cos\alpha = \frac{27}{48}$$

$$\alpha = \cos^{-1}\left(\frac{27}{48}\right)$$

$$\alpha =$$

again using law of cosine :

$$b^2 = a^2 + c^2 - 2ac\cos\beta$$

$$(4)^2 = (5)^2 + (6)^2 - 2(5)(6)\cos\beta$$

$$16 = 25 + 36 - 60\cos\beta$$

$$60\cos\beta = 61 - 16$$

$$\cos\beta = \frac{45}{60}$$

$$=$$

$$\beta = \cos^{-1}\left(\frac{45}{60}\right)$$

$$\beta =$$

Similarly

$$c^2 = a^2 + b^2 - 2ab\cos\gamma$$

$$(6)^2 = (4)^2 + (5)^2 - 2(4)(5)\cos\gamma$$

$$36 = 16 + 25 - 40\cos\gamma$$

$$36 = 41 - 40\cos\gamma$$

$$40\cos\gamma = 41 - 36$$

$$\cos\gamma = \frac{5}{40}$$

$$\gamma = \cos^{-1}\left(\frac{5}{40}\right)$$

$$\gamma =$$

The 3 angles of triangle are

Q.NO.8 :

a-

Solution:

Using pythagoras theorem

in $\triangle ABC$

$$(Hypotenuse)^2 = (Base)^2 + (perpendicular)^2$$

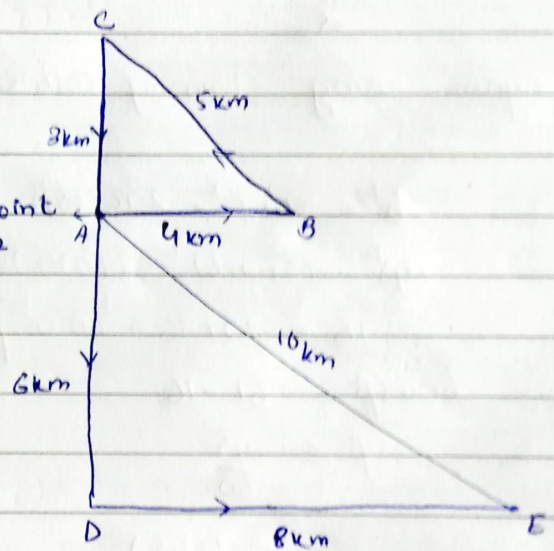$$(5)^2 = (4)^2 + (prep)^2$$

$$25 - 16 = (prep)^2$$

$$9 = (prep)^2$$

$$\sqrt{9} = \sqrt{(perp)^2}$$

perpendicular $= 3km$

Using Pythagoras theorem in $\triangle ADE$

$$(Hyp)^2 = (Base)^2 + (perp)^2$$

$$(Hyp)^2 = (8)^2 + (6)^2$$

$$(Hyp)^2 = 64 + 36$$

$$(Hyp)^2 = 100$$

$$Hyp = 10$$

starting point

3km   5km

A   4km   B

6km   10km

D   8km   E

C

The man is at 10km distance from his starting point.
He travelled 4km+5km+3km+6km+8km = 26km .

b.

..i

c.

Solution:

r = radius of sphere = 7m

surface area of sphere = $A = 4\pi r^2$

$A = 4(3.14)(7)^2$

$A = 4(3.14)(49)$

$A = 196(3.14)$

$A = 615.75$

Volume of sphere $= V = \frac{4}{3}\pi r^3$

$V = \frac{4}{3}(3.14)(7)^3$

$V = 1436.75$

d.

Solution:

Total amount in Rupees = 4320

Zain's share = 2 parts of 4320

Aslam's share = 3 parts of 4320

Ashraf's share = 7 parts of 4320

_____ Date _____

Total parts of money = 7 + 3 + 2

$$= 12$$

Zain's share $= \dfrac{\text{Zain's part}}{\text{total parts}}$ (what is to be distributed)

$$= \dfrac{2}{12} (4320)$$

Zain's share $= 720$ Rs

Aslam's share $= \dfrac{3}{12} (4320)$

$$= 1080 \text{ Rs}$$

Ashrafs' share $= \dfrac{7 (4320)}{12}$

$$= 2520 \text{ Rs}$$