Aptitude Question Papers

Question 1.A and B together can do a piece of work in 9 days. If A does thrice the work of B in a given time, the time A alone will take to finish the work is

a. 4 days

b. 6 days

c. 8 days

d. 12 days

Ans. 12 days

Explanation: (A + B)'s efficiency= 100/9 (= 11.11%).

Suppose, the efficiency of B= x%; hence, the efficiency of A= 3x;

x + 3x= 100/9; x= (25/9)%. => The efficiency of A= (25/3)%.

A will do this work in = 100/(25/3) = 12 days;

Question 2.The diameters of two cylinders are in the ratio 3:2 and their volumes are equal. The ratio of their heights is

a. 2:3

b. 3:2

c. 9:4

d. 4:9

Ans. 4:9

Explanation: Volume1: Volume2 = (pi*$r_1^2h_1$): (pi* $r_2^2h_2$);

Since, volumes of both cylinders are equal;

$(r_1/r_2)^2=(h_2/h_1)$; => h_1/h_2 =4: 9;

Question 3.A trader sold a cycle at a loss of 10%. If the selling price had been increased by Rs. 200, there would have been a gain of 6%. The cost price of the cycle is

a. Rs.1200

b. Rs.1205

c. Rs.1250

d. Rs.1275

Ans. Rs.1250

Explanation: Suppose that the cost price of the cycle= Rs. x;

x -----(sold at a loss of -10%)----> 0.90x;

0.90x----------(Rs. 200 increase)------> 0.90x + 200;

As per the stated condition,

0.90x + 200 = 1.06x;

x = Rs. 1250;

Question 4.In a city, 40% of the people are illiterate and 60% are poor. Among the rich, 10% are illiterate. The percentage of the illiterate poor population is

a. 36

b. 60

c. 40

d. 50

Ans. 60

Explanation: Let Total number of people =100;

Total poor people = 60% of 100 =(60*100)/100=60=(60*100)/100=60;

Therefore, rich people = 40% of 100 =(40*100)/100=40=40;

Total illiterate people = 40% of total people =(40*100)/100=40;

Among rich, 10% are illiterate = 10% of 40 =(10*100)/40=4;

The number of the illiterate poor population =40−4=36;

Therefore, illiterate poor =36, total population =100;

Required percentage =(36*100)/100=36%.

Question 5.In what time will a 100 metres long train running with a speed of 50 km/hr cross a pillar?

a. 7.0 sec

b. 72 sec

c. 7.2 sec

d. 70 sec

Ans. 7.2 sec

Explanation: Speed = Distance/Time;

Time= Distance/ Speed; => Time = 100/(50*5/18) = 7.2 sec.

Question 6.

If $\frac{2p}{p^2 - 2p + 1} = \frac{1}{4}$, then the value of $p + \frac{1}{p}$ will be

a. 8

b. 10

c. 12

d. None of these

Ans. 10

Explanation:

$$\frac{2p}{p^2 - 2p + 1} = \frac{1}{4};$$

$$\frac{2p}{p * (p - 2 + \frac{1}{p})} = \frac{1}{4};$$

$$p + \frac{1}{p} - 2 = 8;$$

$$p + \frac{1}{p} = 10;$$

Question 7.If l + m + n = 9 and $l^2 + m^2 + n^2 = 31$, then the value of lm + mn + nl will be

a. 22

b. 50

c. 25

d. -25

Ans. 25

Explanation: $(l + m + n)^2 = l^2 + m^2 + n^2 + 2(l*m + m*n + n*l)$;

Hence, $lm + mn + nl = 9^2 - 31 = 50/2 = 25$;

Question 8.The centroid of a triangle is the point where

a. the medians meet

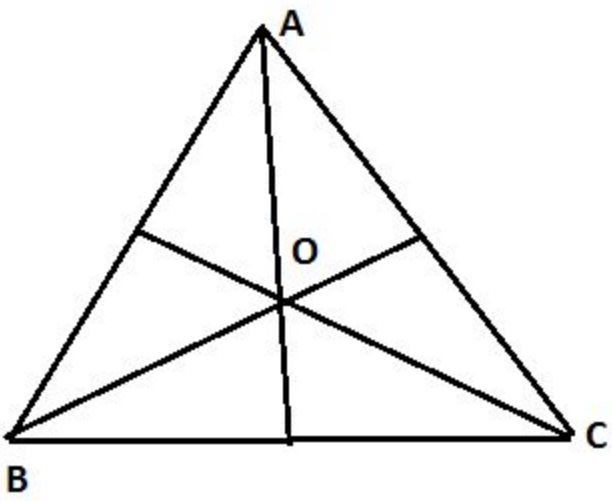
b. the altitudes meet

c. the right bisectors of the sides of the triangle meet

d. the bisectors of the angles of the triangle meet

Ans. the medians meet

Explanation: in the following figure, O is the centroid of the triangle.



Question 9.In a triangle PQR, the side QR is extended to S. ∠QPR = 72° and ∠PRS = 110°, then the value of ∠PQR is:

a. 38°

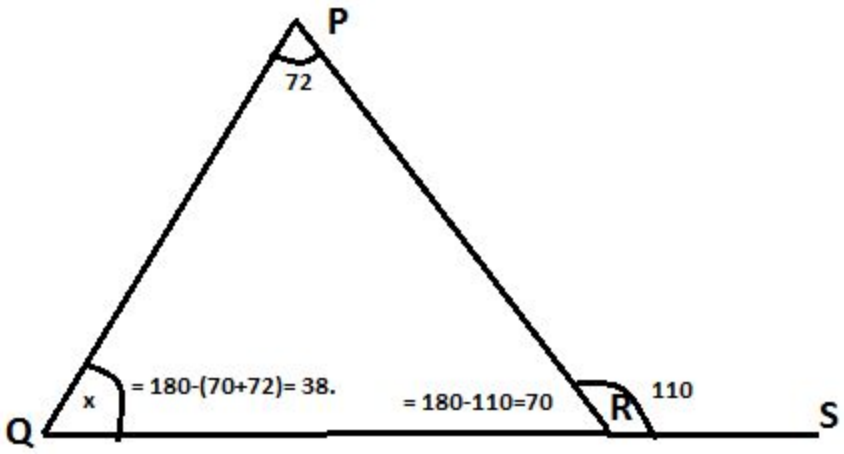
b. 32°

c. 25°

d. 29°

Ans. 38°

Explanation:



Question 10.In a trapezium ABCD, AB || CD, AB < CD, CD = 6 cm and distance between the parallel sides is 4 cm. If the area of ABCD is 16 cm^2, then AB is

a. 1 cm

b. 2 cm

c. 3 cm

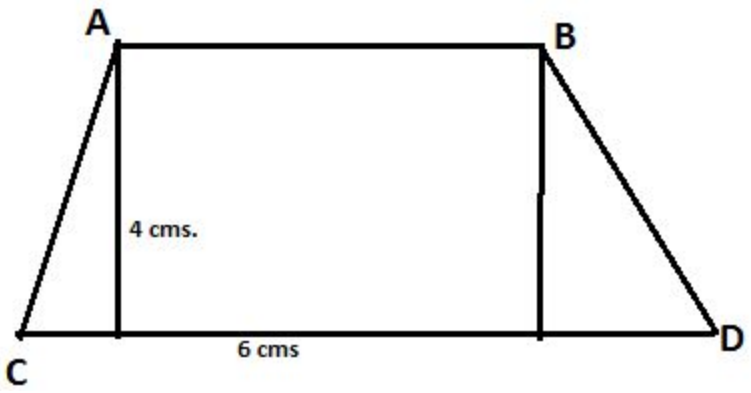
d. 8 cm

Ans. 2 cm

Explanation: The area of trapezium = ½ * Sum of the parallel sides* uniform altitude;

Let AB = x cm;

16 = ½ *(6 + x)* 4; => x = 2cm;



Question 11.If tanθ + cotθ = 5, then the value of $\tan^2 \theta + \cot^2 \theta$ is

a. 22

b. 25

c. 23

d. 27

Ans. 23

Explanation: $\tan\theta + \cot\theta = 5$; (given)

Square both sides-

$\tan^2\theta + \cot^2\theta + 2 = 25$;

$\tan^2\theta + \cot^2\theta = 23$;

Question 12.When a number is divided by 56, the remainder will be 29. If the same number is divided by 8, then the remainder will be

a. 6

b. 7

c. 5

d. 3

Ans. 5

Explanation: Let the dividend be x;

Then the number will be= 56x + 29;

When the above expression will be divided by 8, then the remainder will be equal to (29%8 = 5)

Question 13.If a shop keeper marks his goods for a certain amount so as to get 25% gain after allowing a discount of 20%, then his marked price is

a. Rs.156.25

b. Rs.146.25

c. Rs.166.67

d. Rs.150.25

Ans. Rs.166.67

Explanation: Let the Marked price = Rs. x;

The selling price = 0.80x;

So, the cost price = 0.75*0.80*x;

Let the cost price of the item is Rs. 100.

Hence, 0.75*0.80*x = 100;

x= 166.67;

Question 14.The average of marks of 17 students in an examination was calculated as 71. But it was later found that the mark of one student had been wrongly entered as 65 instead of 56 and another as 24 instead of 50. The correct average is

a. 70

b. 71

c. 72

d. 73

Ans. 72

Explanation: The total marks obtained by the students= 71* 17= 1207;

After correction, The total marks obtained= 1207 – 65 + 56 -20 +50= 1228;

The average of marks obtained by the students= 1228/ 17 = 72.23;

Question 15.The simple interest on a sum for 5 years is two-fifth of the sum. The rate of interest per annum is

a. 0.1

b. 0.08

c. 0.06

d. 0.04

Ans. 0.08

Explanation: SI=PRT/100;

SI= 2/5 * P;

R= (2/5 * 100)/5 = 8%= 0.08.

Question 16.

If $(x+\frac{1}{x})^2 = 3$, then the value of $x^3 + \frac{1}{x^3}$ is

a. 0

b. 1

c. 2

d. -1

Ans. 0

Explanation:

$$x^2+\frac{1}{x^2}+2=3;$$

$$x^2+\frac{1}{x^2}=1;$$

$$x^3+\frac{1}{x^3}=(x+\frac{1}{x})(x^2+\frac{1}{x^2}-1);$$

$$Hence, x^3+\frac{1}{x^3}=0;$$

Question 17.If a - b = 3 and $a^2 + b^2 = 25$, then the value of ab is

a. 16

b. 8

c. 10

d. 15

Ans. 8

Explanation:

$$(a-b)^2 = a^2 + b^2 - 2ab;$$
$$3^2 = 25 - 2ab;$$
$$2ab = 25 - 9 = 16;$$
$$ab = 8;$$

Question 18.In ΔABC, ∠B = 70°and ∠C = 60°. The internal bisectors of the two smallest angles of ΔABC meet at O. The angle so formed at O is

a. 125°

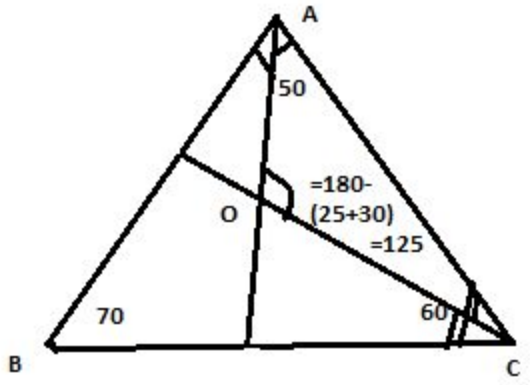
b. 120°

c. 115°

d. 110°

Ans. 125°

Explanation:



Question 19.If θ be positive acute angle and 5cosθ + 12sinθ = 13, then the value of cosθ is

a. 12/13

b. 5/13

c. 5/12

d. 1/5

Ans. 5/13

Explanation: 5cosθ + 12sinθ = 13;

(5/13) * cosθ + (12/13) * sinθ = 1;

Suppose that the angle formed in the figure is ∅.

$\sin\varnothing.\cos\theta+\cos\varnothing.\sin\theta= 1;$

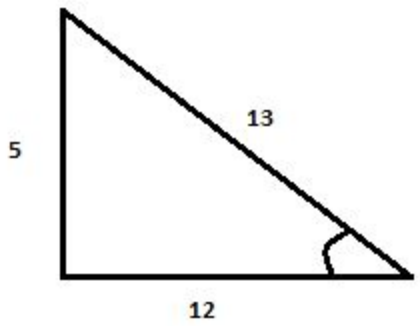
$\sin(\theta + \varnothing)= \sin 90;$

$\theta + \varnothing = 90;$

$\theta = 90- \varnothing;$

$\cos\theta= \cos(90- \varnothing);$

$\cos\theta=\sin\varnothing= 5/13;$



Question 20.A cylinderical container of 32 cm height and 18 cm radius is filled with sand. Now all this sand is used to form a conical heap of sand. If the height of the conical heap is 24 cm, what is the radius of its base?

a. 12 cm

b. 24 cm

c. 36 cm

d. 48 cm

Ans. 36 cm

Explanation: The volume of both the shapes are same.

Pi* $(18)^2$* 32= 1/3 * pi* r^2* 24;

R= 36 cm.