

Aptitude Question & Answers

Question1.If 100 cats kill 100 mice in 100 days, then 4 cats would kill 4 mice in how many days?

- a. 4 days
- b. 3 days
- c. 40 days
- d. 100 days

Ans. 100 days

Explanation: if 100 cats kills 100 mice in= 100 days;

Then , 100 cats will kill 1 mouse in = 1 days; => 1 cat will kill 1 mouse in = 100 days;

And, 4 cats will kill 1 mouse in = 25 days;

Hence, 4 cats will kill 4 mouse in = 100 days;

Question2.

In ΔABC , $DE \parallel BC$ such that $\frac{AD}{BD} = \frac{3}{5}$. If $AC = 5.6$ cm, then AE is equal to

- a. 4.2 cm
- b. 3.1 cm
- c. 2.8 cm
- d. 2.1 cm

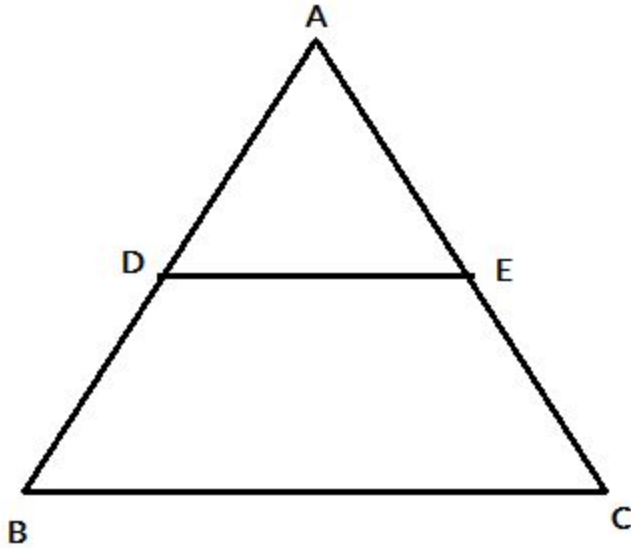
Ans. 2.1 cm

Explanation: $AD : BD = 3 : 5$;

As the theorem of proportionality states- $AE : CE = 3 : 5$; => $AE : AC = 3 : 8$;

$AE = (3/8) * AC$;

$AE = 2.1$ cm;



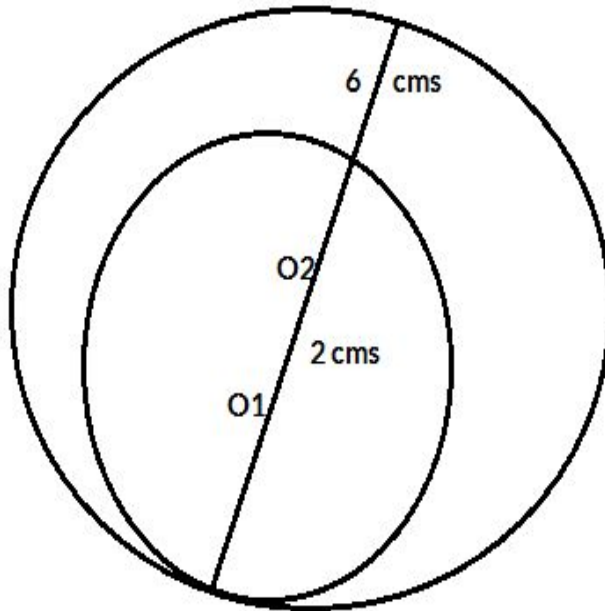
Question 3. If two circles touch each other internally. The greater circle has its radius as 6 cm and the distance between the centers of the circles is 2 cm. The radius of the other circle is

- a. 3 cms
- b. 4 cms
- c. 2 cms
- d. 5 cms

Ans. 4 cms

Explanation: O_2 is the center of the outer circle and O_1 is the center of inner circle.

Hence, Radius of outer circle = $6 - O_1O_2 = 6 - 2 = 4$ cms.



Question4.An office opens at 10 AM and closes at 5 PM. The lunch interval is 30 minutes. The ratio of lunch interval to the total period of office hours is

- a. 1:7
- b. 1:14
- c. 7:1
- d. 14:1

Ans. 1:14

Explanation: Total working hours = 7 hours = $7 \times 60 = 420$ minutes.

Hence, the required ratio = $30/420 = 1:14$;

Question5.A Bookseller allowed 15% discount on the books sold. Sunil purchased books worth Rs.1500. How much will he have to pay to Bookseller.

- a. Rs.1200

b. Rs.1250

c. Rs.1275

d. Rs.1300

Ans. Rs.1275

Explanation: the percentage at which Sunil purchased the book = $100 - 15 = 85\%$;

The Amount paid to the Book seller = 85% of 1500 = Rs. 1275.

Question6.If the ratio between the profit and sale price of an article is 1:5, then the ratio between the sale price and the cost price of that article is:

a. 3:2

b. 4:3

c. 5:4

d. 6:5

Ans. 5:4

Explanation: Profit: Sale Price = 1: 5; \Rightarrow Profit = Sale Price/5;

Cost Price = Sale price – Profit;

Cost Price = Sale Price– Sale Price/5; \Rightarrow Cost Price = $4 * \text{Sale Price}/5$;

Sale Price: Cost Price = 5: 4;

Question7.What percent of 1 day is 36 minutes?

a. 25%

b. 2.5%

c. 3.6%

d. 0.25%

Ans. 2.5%

Explanation: 1 day = $24 * 60$ minutes = 1440 minutes;

The required percentage = $36 * 100 / 1440 = 2.5\%$.

Question8. A car covers a certain distance in 25 hrs. If it reduces the speed

by $\frac{1}{5}$, the car covers 200 km less in that time. The speed of car is

- a. 60 km/hr
- b. 30 km/hr
- c. 40 km/hr
- d. 50 km/hr

Ans. 40 km/hr

Explanation: Let the distance be x km and speed be y kmph;

$$x/y = 25 \Rightarrow x = 25y; \text{ -----eq.(i.)}$$

$$(x-200)/(4y/5) = 25 \Rightarrow x-200 = 20y; \text{ ---- eq.(ii.)}$$

Put value of x from eq.(i) to eq.(ii.)-

$$25y-200 = 20y;$$

$$5y = 200 \Rightarrow y=40 \text{ kmph;}$$

Question 9. At what percent of simple interest will a sum of money double itself in 15 years?

- a. $6\frac{1}{3}\%$
- b. $6\frac{2}{3}\%$
- c. $6\frac{1}{2}\%$
- d. 6%

Ans. b.

Explanation: Use $I = PRT/100$;

Put $I = P$ in the above formula;

$$P = P \cdot R \cdot 15/100; \Rightarrow R = 100/15 = 20/3\%;$$

Question 10.

$\frac{1}{\sqrt{a}} - \frac{1}{\sqrt{b}} = 0$, then the value of $\frac{1}{a} + \frac{1}{b}$ is:

- a. $1/\sqrt{ab}$
- b. \sqrt{ab}
- c. $2/\sqrt{ab}$
- d. $1/2\sqrt{ab}$

Ans. $2/\sqrt{ab}$

Explanation:

$$\frac{1}{\sqrt{a}} - \frac{1}{\sqrt{b}} = 0;$$

$$\sqrt{b} - \sqrt{a} = 0;$$

Squaring both sides -

$$b + a - 2\sqrt{ab} = 0;$$

$$a + b = 2\sqrt{ab};$$

Divide the equation by ab;

$$\frac{1}{a} + \frac{1}{b} = \frac{2}{\sqrt{ab}}$$

Question 11. If $x^2 + y^2 + z^2 = 14$ and $xy + yz + zx = 11$, then the value of $(x+y+z)^2$ is

- a. 16
- b. 25
- c. 36
- d. 49

Ans. 36

Explanation: $x^2 + y^2 + z^2 = 14$ -----eq.(i.)

$xy + yz + zx = 11$ -----eq.(ii.)

Adding eq.(i.) and 2 x eq.(ii.), we get-

$$x^2 + y^2 + z^2 + 2(xy + yz + zx) = 14 + 2 \cdot 11 = 36;$$

$$(x+y+z)^2 = 36;$$

Question 12.

If $\sqrt{2} \tan 2\theta = \sqrt{6}$ and $0^\circ < \theta < 45^\circ$, then the value of $\sin \theta + \sqrt{3} \cos \theta - 2 \tan^2 \theta$ is

a. $\frac{2}{3}$

b. $\frac{4}{3}$

c. 2

d. $\frac{8}{3}$

Ans. $\frac{4}{3}$

Explanation: $\tan 2\theta = \frac{\sqrt{6}}{\sqrt{2}} = \sqrt{3}; \Rightarrow \tan 2\theta = \tan 60;$

$$2\theta = 60; \Rightarrow \theta = 30;$$

$$\sin \theta + \sqrt{3} \cos \theta - 2 \tan^2 \theta = \sin 30 + \sqrt{3} \cos 30 - 2 \tan^2 30;$$

$$= \frac{1}{2} + \sqrt{3} \cdot \frac{\sqrt{3}}{2} - 2 \cdot \frac{1}{3} = \frac{1}{2} + \frac{3}{2} - \frac{2}{3} = 2 - \frac{2}{3} = \frac{4}{3};$$

Question 13. A positive number when decreased by 4, is equal to 21 times the reciprocal of this number. The number is:

a. 3

b. 7

c. 5

d. 9

Ans. 7

Explanation: Suppose the number = x;

$$x-4 = 21 \cdot \left(\frac{1}{x}\right); \Rightarrow x^2 - 4x - 21 = 0;$$

$$x^2 - (7+3)x - 21 = 0;$$

$$x^2 - 7x + 3x - 21 = 0; \Rightarrow x(x-7) + 3(x-7) = 0;$$

$$(x-7)(x+3) = 0; \Rightarrow x = 7, -3;$$

Question 15.

If $x = \sqrt[3]{28}, y = \sqrt[3]{27}$, then the value of $x + y - \frac{1}{x^2 + xy + y^2}$ is

- a. 8
- b. 7
- c. 6
- d. 5

Ans. 6

Explanation: from the given conditions, we can deduce that-
 $x^3 = 28; y^3 = 27;$

$$\begin{aligned} x + y - \frac{1}{x^2 + xy + y^2} &= x + y - \frac{(x - y)}{(x - y)x^2 + xy + y^2}; \\ &= x + y - \frac{x - y}{x^3 - y^3}; \\ &= x + y - \frac{x - y}{28 - 27}; \\ &= x + y - x + y = 2y = 2 * 3 = 6 \end{aligned}$$

Question 16.

- a. 48
- b. 1792
- c. 4096
- d. 570

Ans. 4096

Explanation: $x/y = 12/4 = 3;$

Hence, $(x+y)^{x/y} = (12+4)^3 = 16^3 = 4096;$

Question 17. In a triangle PQR, PQ = PR and $\angle Q$ is twice that of $\angle P$. Then $\angle Q$ is equal to

- a. 72°
- b. 36°
- c. 144°
- d. 108°

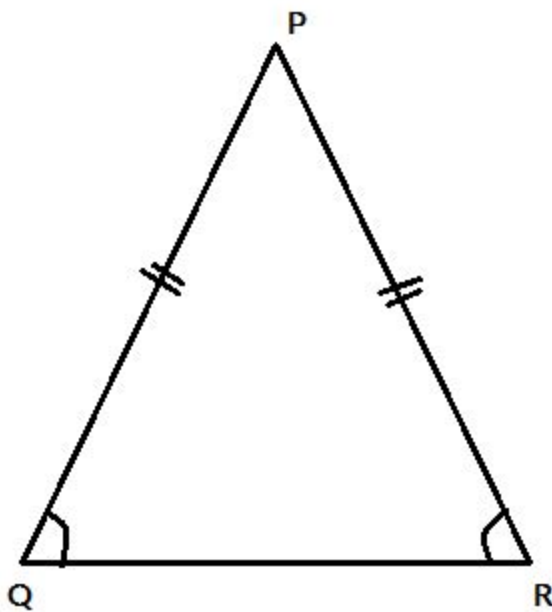
Ans. 72°

Explanation: $Q = 2P$ (given); $Q=R$ ($PQ=PR$);

$P + Q + R = 180$;

$Q/2+Q+Q = 180$; $\Rightarrow 5Q/2 = 180$;

$Q = 72$;



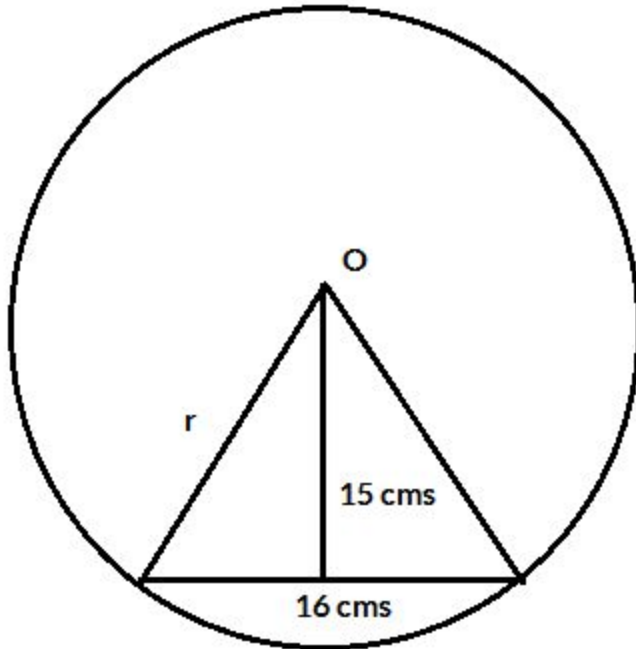
Question 18.If the length of a chord of a circle is 16 cms. and is at a distance of 15 cm from the centre of the circle, then the radius of the circle (in cm) is:

- a. 15
- b. 16
- c. 17
- d. 34

Ans. 17

Explanation: $r^2 = 15^2 + 8^2$;

$r^2 = 225 + 64 = 289$; $\Rightarrow r = 17$ cms;



Question 19. On 24th May 2008 the maximum temperature of Delhi, Kolkata and Mumbai were recorded as 35°C , 33°C and 34°C respectively. What was the maximum temperature of Chennai so that the average maximum temperature of those cities would be 35° ?

- a. 34°C
- b. 35°C
- c. 36°C
- d. 38°C

Ans. 38°C

Explanation: Average temperature of all cities including Chennai = $35 + 33 + 34 + x = 102 + x$;

$$(102 + x)/4 = 35; x = 140 - 102 = 38;$$

Question 20. The diameter of a sphere is twice the diameter of another sphere. The curved surface area of the first and the volume of the second are numerically equal. The numerical value of the radius of the first sphere is

- a. 3
- b. 24

c. 8

d. 16

Ans. 24

Explanation: Let the diameter of first sphere is d and diameter of second sphere is D .

$$d=2D;$$

$$\pi * d^2 = 1/3 * \pi * (D)^3;$$

put value of d in the above equation-

$$4D^2 = 1/3 *(D^3); \Rightarrow D = 12 \text{ cms};$$

$$d=2*12 = 24 \text{ cms.}$$

Question 21. The thread of a kite makes 60° angle with the horizontal plane. If the length of the thread be 80 m, then the vertical height of the kite will be

a. $40/\sqrt{3}$ m

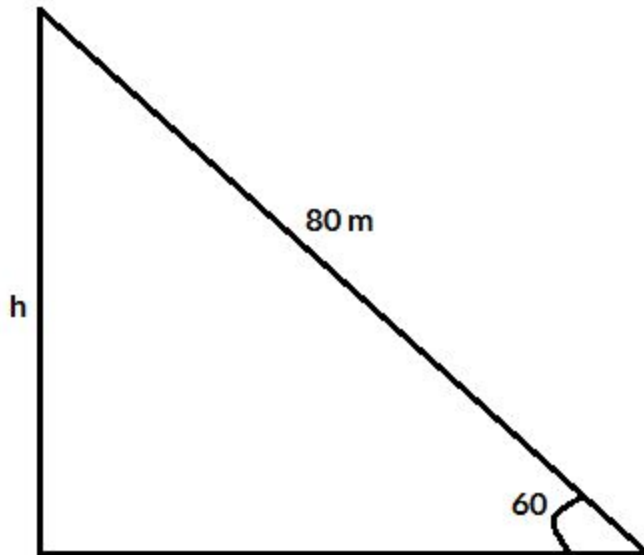
b. $80\sqrt{3}$ m

c. 80 m

d. $40\sqrt{3}$ m

Ans. $40\sqrt{3}$ m

Explanation: $h = 80 \sin 60 = 40\sqrt{3}$ m;



Question 22. Study the pie chart carefully and answer the questions. The pie chart represents the percentage of people involved in various occupations. Total number of people = 20000



How many more people are involved in service than in trade?

- a. 3660
- b. 2660
- c. 1660
- d. 660

Ans. 2660

Explanation: %Difference in service and trade = $20 - 6.7 = 13.3\%$;

Hence, no. of people involved in service than in trade = $13.3 \times 20000 / 100 = 2660$;

Question 23. Study the pie chart carefully and answer the questions. The pie chart represents the percentage of people involved in various occupations. Total number of people = 20000



The ratio of the people involved in service to that of industry is

- a. 1:2
- b. 2:3
- c. 3:4
- d. 3:2

Ans. 2:3

Explanation: The required ratio = $20\% : 30\% = 2 : 3$;

Question 24. Study the pie chart carefully and answer the questions. The pie chart represents the percentage of people involved in various occupations. Total number of people = 20000



The sectorial angle made by the people involved in service in the given pie-chart is

- a. 36°
- b. 90°
- c. 72°
- d. 108°

Ans. 72°

Explanation: The sectorial angle made by the people in service sector = 20% of 360 = 72;

Question 25. Study the pie chart carefully and answer the questions. The pie chart represents the percentage of people involved in various occupations. Total number of people = 20000



The difference between the maximum number of people involved and minimum number of people involved in various professions is

- a. 2640
- b. 3640
- c. 6320
- d. 5320

Ans. 5320

Explanation: The Maximum number of people is involved in agriculture and minimum people are involved in trade;

Hence, % difference = $33.30 - 6.7 = 26.6\%$.

Hence, the required number of people = 26.6% of 20000 = 5320;