Solution

VIII STD.

Class 08 - Admission Test

1.

(b) 14 cm

Explanation:

We know that, circumference = $2\pi r$

$\Rightarrow$ 88 = $2 \times \frac{22}{7} \times r$

$\Rightarrow$ r = $\frac{88 \times 7}{2 \times 22}$ [$\because$ circumference = 88 cm, given]

$\Rightarrow$ r = 14 cm

Hence, the radius is 14 cm

2. **(a)** $33\frac{1}{3}$

Explanation:

Required percentage = $\frac{50}{150} \times 100$

= $33\frac{1}{3}\%$

3. **(a)** $\frac{5}{4}$

Explanation:

$\frac{(5)^{0.25} \times (125)^{0.25}}{(256)^{0.10} \times (256)^{0.15}}$

$= \frac{(5)^{0.25} \times (5^3)^{0.25}}{(4^4)^{0.10} \times (4^4)^{0.15}}$

$= \frac{(5)^{0.25} \times (5)^{0.75}}{(4)^{0.40} \times (4)^{0.60}} = \frac{(5)^1}{(4)^1} = \frac{5}{4}$.

4.

(d) Pooja, by 2 seconds

Explanation:

Pooja, by 2 seconds

5.

(b) 80^o, 10^o

Explanation:

We know that Two Angles are Complementary when they add up to 90 degrees.

Here, first angle = 80^o

Second angle = 10^o

Then , $80^o + 10^o = 90^o$

Thus, these Angles are Complementary.

6.

(d) 10^{-3}

Explanation:

$\left(1^3 + 2^3 + 3^3 + 4^3\right)^{\frac{-3}{2}}$

$= (1 + 8 + 27 + 64)^{\frac{-3}{2}}$

$= (100)^{\frac{-3}{2}}$

$= \left[(100)^{\frac{1}{2}}\right]^{-3}$ $=(10)^{-3}$

7.

(d) 1

Explanation:

$1^{\text{any number}} = 1$

8.

(d) Cube

Explanation:

A polyhedron is regular, if its faces are congruent regular polygons and the same number of faces meet at each vertex. Hence, a cube satisfies all the properties for a regular polyhedron.

9.

(d) 55^o

Explanation:

Sum of two opposite interior angle is equal to exterior angle

Let the other angle be x

So, 85 = 30 + x

x = 85 - 30

x = 55°

10.

(c) ₹ 800

Explanation:

Let money = x

$12\frac{1}{2}\%$ of $x = \frac{x}{8}$ ∴ loss = $\frac{x}{8}$

∴ Remainder money $\frac{x-x}{8} = \frac{7x}{8}$

70% of remainde = $\frac{7x}{8} \times \frac{70}{100} = \frac{49x}{80}$

i.e. $\frac{49x}{80}$ amount spends.

Now, left amount = $\frac{7x}{8} - \frac{49x}{80} = 210$

$\Rightarrow \frac{70x-49x}{80} = 210$

$\Rightarrow x = \frac{210\times80}{21} = 800$

∴ Money at the beginning = ₹ 800

11.

(d) 85^o

Explanation:

Sum of two opposite interior angle is equal to exterior angle.

Let the other angle be x

110 = 25 + x

x = 110 - 25

x = 85°

12.

(b) 4 unit

Explanation:

Circumference = area, $2\pi r = \pi r^2 \Rightarrow r = 2$

Diameter = $2r = 2 \times 2 = 4$ unit

13.

(c) 2 : 3

Explanation:

Gopi	Krishna
P = ₹ 1800	P = ₹ 1200
R= 12%	R= 18%
T = 2 years	T = 3 years
$I_1 = \frac{PTR}{100}$	$I_2 = \frac{PTR}{100}$
$= \frac{1800 \times 2 \times 12}{100}$	$= \frac{1200 \times 3 \times 18}{100}$
= ₹ 432	= ₹ 648

I_1: I_2 = 432 : 648 = 2 : 3.

14.

(d) decrease by 19%

Explanation:

Let Original radius of hemisphere = r_1

∴ Original surface area = $3\pi r_1^2$

= A_1(Say)

New radius (r_2) = r_1 - 10% of r_1

= $r_1 - \frac{10}{100} r_1 = \frac{9}{10} r_1$

∴ New surface area $A_2 = 3\pi r^2$

= $3 \times \frac{22}{7} \times \left(\frac{9}{10} r_1\right)^2$

$3 \times \frac{22}{7} \times \frac{81}{100} r_1^2 = \frac{81}{100}$ A_1

Decrease in surface area = A_1 - A_2

= $A_1 - \frac{81}{100} A_1 = \frac{81}{100}$ A_1

% Decrease in Surface area = $\frac{\frac{19}{100} \cdot A_1}{A_1} \times 100$

= 19%

15.

(b) 62

Explanation:

Mode for the data set is 62 as the occurrence of this number is maximum.

16. **(a)** 45^o

Explanation:

Here, $\frac{1}{2}$ of right angle = $\frac{1}{2} \times 90^o = 45^o$

Then, First angle = 45^o

Second angle = 90^o - 45^o = 45^o

17. **(a)** 12

Explanation:

A cuboid is a polyhedron with six parallel faces. It has 8 vertices, 6 faces and 12 edges.

18.

(b) $8\pi r^2$

Explanation:

Given, radius of semi-circle = 4r

∵ Area of semi-circle = $\frac{1}{2} \times \pi^2$

= $\frac{1}{2} \times \pi \times (4r)^2 = \frac{16}{2} \pi r^2 = 8\pi r^2$

19.

(d) 2 years 6 months

Explanation:

Sum = ₹1860

Amount = ₹2278.50

Amount = S.I + Sum

$\Rightarrow$ 2278.50 = $\frac{PRT}{100}$ + P

$\Rightarrow$ 2278.50 = $\frac{1860\times9\times T}{100}$ + 1860

$\Rightarrow$ 2278.50 = $\frac{1674T}{10}$ + 1860

$\Rightarrow$ 2278.50 - 1860 = 167.4T

$\Rightarrow$ 418.50 = 167.4T

$\Rightarrow$ T = $\frac{418.5}{167.4}$ = 2.5 = Means 2 years 6 month

20. **(a)** Cylinder

Explanation:

10 one-rupee coins piled up results in a cylinder.

21.

(b) Octagon

Explanation:

Since, a pyramid is a polyhedron whose base is a polygon and lateral faces are triangles. Hence, octagon can be the base of a pyramid.

22. **(a)** $\frac{599}{311}$

Explanation:

Let x = $\frac{65}{12}$ and y = $\frac{12}{7}$

According to question,

(x + y) $\div$ (x - y) = $(\frac{65}{12}+\frac{12}{7})\div(\frac{65}{12}-\frac{12}{7})$

= $(\frac{455+144}{84})\div(\frac{455-144}{84})$

= $(\frac{599}{84})\div(\frac{311}{84}) = \frac{599}{84}\times\frac{84}{311} = \frac{599}{311}$

23.

(c) 2

Explanation:

A cylinder is a 3D shape with two circular faces of base and one curved face. So we need two circles to make a cylinder.

24.

(b) 630

Explanation:

$3\sqrt[3]{2}\times7\sqrt[3]{6}\times5\sqrt[3]{18}$

= $3\times(2)^{\frac{1}{3}}\times7\times(6)^{\frac{1}{3}}\times5\times(18)^{\frac{1}{3}}$

= $105\times(2\times6\times18)^{\frac{1}{3}}$

= $[105]\times[6]^{3\times\frac{1}{3}}$ = 105 $\times$ 6 = 630

25. **(a)** 150000 m^2

Explanation:

The length and the breadth of a rectangular piece of land are 500 m and 300 m.

We know that the area of rectangular surface = length $\times$ breadth

= 500 $\times$ 300

Area of the rectangular piece of land = 150000 m^2