How is $\frac{1}{4}$ expressed as percentage?

1. 75% 2. 80% 3. 25% 4. 12.5%

Ans: 3

Explanation

$\frac{1}{4}$ = 0.25 = $\frac{25}{100}$ = 25%

2. Find $\frac{0.35 \text{ x } 0.35 - 0.34 \text{ x } 0.34}{69}$

1. 0.0001 2. 0.001 3. 0.01 4. 0.2

Ans: 1

Explanation

The given sum is of the form $\frac{a^2-b^2}{(a+b)x100}$ (where a= 0.35 and b 0.34)

$= \frac{a-b}{100} = \frac{(0.35-0.34)}{100} = \frac{0.01}{100}$ = 0.0001

3. How is $\frac{1}{2}$% expressed as a decimal fraction?

1. 0.5 2. 0.05 3. 0.005 4. 0.0005

Ans: 3

Explanation

$\frac{1}{2}$% = 1/200 = 0.005

4. How much is 40% of 350?

1. 140 2. 135 3. 180 4. 1250

Ans: 1

Explanation

$\frac{40}{100}$× 350 = 140

5. The radii of two concentric circles are 12 cm and 5 cm respectively. What is the area of the annular space between the two circles?

1. 330 cm^2 2. 460 cm^2 3. 374 cm^2 4. 340 cm^2

Ans: 3

Explanation

Let the radii of two circles be, R and r.

∴Area of annular space between thetwo circles = $\pi(R^2 - r^2) = \frac{22}{7}(12^2 - 5^2)$

$= \frac{22}{7} \times 17 \times 7 = 374$

6. Ravi and Samy together can finish a job in 10 days. Ravi can do the same job on his own in 15 days. How long will Samy take to do the job by himself?

1. 22 2. 28 3. 25 4. 30

Ans: 4.

Explanation

Ans:

(Ravi +Samy)'s one day's work = $\frac{1}{10}$

Ravi's one day work = $\frac{1}{15}$

∴ Samy's one day work = $\frac{1}{10} - \frac{1}{15} = \frac{3-2}{30} = \frac{1}{30}$. Therefore Samy will take 30 days to finish the work.

7. 60% of which number is 900.

1. 1200 2. 1600 3. 1500 4. 1800

Ans:3

Explanation

Let the number be x.

60% of x= 900 → x = $\frac{900}{60}$x100 ∴ x = 1500

8. Which of the following is the largest fraction?

1. $\frac{15}{16}$ 2. $\frac{8}{13}$ 3. $\frac{7}{8}$ 4. $\frac{11}{12}$

Ans: 1

Explanation

Write the values of the fractions → $\frac{15}{16}, \frac{8}{13}, \frac{7}{8}, \frac{11}{12}$ → 0.9375, 0.6154, 0.875, 0.9167.

9. Which of the following figures of given dimensions has the longest perimeter:

1. A square of side 10 cm
2. A rectangle of sides 12 cm and 9 cm
3. A circle of radius 7 cm
4. A rhombus of sides 9 cm

Ans: 3

Explanation
Perimeter as per
Option 1 → 40 cm
Option 2 →42 cm
Option 3 → 44 cm
Option 4 → 36 cm

10. Express 85% as a fraction.

Ans: $\frac{85}{100} = \frac{17}{20}$

11. $\frac{0.07 \times 0.07 \times 0.07 - 0.05 \times 0.05 \times 0.05}{0.07 \times 0.07 + 0.07 \times 0.05 + 0.05 \times 0.05} =$ _____

1. 0.002
2. 0.02
3. 0.0002
4. 0.2

Ans:2

Explanation

Given sum is of the form: $\frac{a^3-b^3}{a^2+ab+b^2} = \frac{(a-b)(a^2+ab+b^2)}{a^2+ab+b^2} = a - b \rightarrow 0.07 - 0.05 = 0.02$

12. Which of the following is correct representation of the proportion A: B:: C: D?

1. A×B = C×D
2. A×D = B×C
3. A×C = B×D
4. B×C =A×B

Ans: 2

13. How many balls of radius 1 cm can be made by casting a sphere of radius 10 cm?

1. 100
2. 1000
3. 1500
4. None

Ans:2

Explanation

Sphere volume, $V = \frac{4}{3}\pi r^3$

$\frac{V_1}{v_1} = \frac{10^3}{1^3} = 1000$

14. Convert 72kmph in to m/s

1. 10m/s 2. 15m/s 3. 20 m/s 4. 25m/s

Ans: 3

Explanation

1 kmph = $\frac{5}{18}$ m/s

∴ 72 kmph = $\frac{5}{18}\times 72 = 20$ or $\frac{72000}{60x60}$ m/s

Table:Meter per second (m/s) to Kilometer per hour (KM/Hr or KMPH) (conversion table)

Meter per second (m/s)	Kilometer per hour (KMPH)
1	3.6
2	7.2
3	10.8
4	14.4
5	18
6	21.6
7	25.2
8	28.8
9	32.4
10	36
11	39.6
12	43.2
13	46.8
14	50.4
15	54
16	57.6
17	61.2
18	64.8
19	68.4
20	72

15. A man borrowed Rs. 8000 at 10% per annum simple interest and immediately lent the whole sum at 10% per annum compound interest. What does he gain at the end of 2 years?

1. Rs.60 2. Rs. 80 3. Rs.100 4. Rs.120

Ans:2

Explanation: The difference between CI and SI for 2 years = $P\frac{R^2}{100}$

(The above relation is applicable, i.e., the difference between CI and SI for a principal of P at the rate of R for 2 years only.)

CI and SI for 2 years = $P\frac{R^2}{100}$ $=8000 \times \left(\frac{10}{100}\right)^2 = 80$ (gain)

16. The product of two numbers is 24. Their average is 6. The cube of their sum is :

1. 1628 2. 1728 3. 1528 4. None of the above

Ans: 2

Explanation

Let x and y be the numbers. The given conditions are

1. xy = 24,

2. $\frac{x+y}{2} = 6$; $\therefore (x + y) = 12 \rightarrow (x + y)^3 = 12^3 = 1728$

17. Find $(a^2 + b^2)$ $(a+b)$ $(a-b)$.

1. $a^4 + b^4$ 2. $a^4 - b^4$ 3. $a^3 + b^3$ 4. $a^3 - b^3$

Ans:2

Explanation

$(a+b)(a-b) = (a^2 - b^2)$

$(a^2 + b^2)(a^2 - b^2) = a^4 - b^4$

18. One micron is equal to –

1. 0.1 mm 2. 0.01 mm 3. 0.001 mm 4. 0.0001 mm

Ans: 3

Explanation

One micron = $\frac{1}{1000}$ mm or 10^{-6} m

19. If α and β are the roots of the questions $5x^2$ - x - 2=0, then the equation for which roots are $\frac{2}{\alpha}$ and $\frac{2}{\beta}$ is :

1. x^2-x+10=0 2. x^2-x-10=0 3. x^2+x+10=0 4.x^2+x-10=0

Ans:4

Explanation

Work out the sum from the first principles.

Given: α, β are roots of the equation $5x^2-x-2=0$.
The given equation is of the form: $ax^2+bx+c=0$
For the above equation, sum of the roots = $\frac{-b}{a}$ and product of the root = $\frac{c}{a}$
For the equation to be found, let the roots be α and β.
∴ Sum of roots = α + β and product of the roots = α β
For the given Eqn. $5x^2-x-2=0$, a = 5, b = -1 and c = -2
∴ $\alpha+\beta=\frac{1}{5}$ and $\alpha\beta=-\frac{2}{5}$
The required equation with roots $\frac{2}{\alpha}$ and $\frac{2}{\beta}$ is derived as follows:
The sum of roots:

$$\frac{2}{\alpha}+\frac{2}{\beta}=\frac{2(\alpha+\beta)}{\alpha\beta}=\frac{2\left(\frac{1}{5}\right)}{-\frac{2}{5}}=-1$$

Product of roots:

$$\frac{2}{\alpha}\times\frac{2}{\beta}=\frac{4}{\alpha\beta}=\frac{4}{-2/5}=-10$$

Hence, required equation: x^2-(sum of the roots)x+(product of the roots) =0
$x^2-(-1)x+(-10)=0 \rightarrow x^2+x-10=0$

Box: Quadratic equation

1. The general form of a quadratic equation is $ax^2+bx+c=0,\ a\neq 0$. a, b and c are real numbers.
2. A real number x is said to be a root of the quadratic equation $ax^2+bx+c=0$ where $a\neq 0$ if $ax^2+bx+c=0$. The zeroes of the quadratic equation polynomial $ax^2+bx+c=0$ and the roots of the corresponding quadratic equation $ax^2+bx+c=0$ are the same.
3. Discriminant: The expression b^2-4ac is called discriminant of the equation $ax^2+bx+c=0$ and is usually denoted by D. Thus discriminant $=b^2-4ac$.
4. Every quadratic equation has two roots which may be real, coincident or imaginary.

5. If α and β are the roots of the equation $ax^2 + bx + c = 0$ then

$$\alpha = \frac{-b + \sqrt{b^2 - 4ac}}{2a} \quad and \quad \beta = \frac{-b - \sqrt{b^2 - 4ac}}{2a}$$

6. Sum of the roots, $\alpha + \beta = \frac{-b}{a} = \frac{-coefficient\ of\ x}{coefficient\ of\ x^2}$ and
7.
8. Products of the roots, $\alpha \cdot \beta = \frac{c}{a} = \frac{constant\ term}{coefficient\ of\ x^2}$

9. Forming quadratic equation, when roots α and β are given

$$x^2 - (\alpha + \beta)x + \alpha\beta = 0$$

Or

$$x^2 - (sum\ of\ zeroes)x + product\ of\ zeroes = 0$$

10. Nature of roots of $ax^2 + bx + c = 0$
    i. If D>0, then roots are real and unequal.
    ii. D=0, then the equation has equal and real roots.
    iii. D<0, then the equation has no real roots.

where discriminant, D = $b^2 - 4ac$.

20 $\left(\frac{4+\sqrt{2}}{\sqrt{2}+1}\right)$ =?

1. 2.2428 2. 2.4136 3. 2.3216 4. None of these

Ans:1

Explanation

The given sum: $\frac{4+1.414}{1.414+1} = \frac{5.414}{2.414}$ = 2.2428

21. The value of $\frac{\tan^2\theta+1}{\sec^2\theta}$ is

1. secθ 2. cosec θ 3. 0 4.1

Ans: 4

Explanation

The given equation is of the form : $\frac{\sec^2\theta}{\sec^2\theta} = 1$

22. By which smallest number 1323 must be multiplied so that it becomes a perfect cube?

1.**2** **2. 3** **3.**5 4.7

Ans:4

Explanation

The given number is: 3 x 21 x 21 = 3 x 3 x 3 x 7 x 7.
Therefore to make it a perfect cube, multiply by 7.

23. The height of a tree increases annually by1/8th of its height. What will be its height after 2 years, if the present height is 16 m ?

1. 20.25 m 2.19.88 m 3.20.72 m 4. 21.88m

Ans: 1

Explanation

Use compound interest formula.

Height after 2 years = $16\left(1+\frac{1}{8}\right)^2 = 16\,(1.125)^2 = 16(1.265625) = 20.25$

(or)

$16\left(1+\frac{1}{8}\right)^2 = 16 \times \frac{9}{8} \times \frac{9}{8}$

$= \frac{81}{4} = 20.25$

24. If a chord subtends 80° at the circumference, the angle it subtends at the centre is :

1. 80° 2.40° 3.120° 4. 160°

Ans: 4

Explanation

2 x80 = 160° (One of the features of an arc subtended angle at the circumference and centre)

25. The sum of squares of two numbers is 60 and the square of their difference is 44. The product of the two numbers is:

1. 16 2.18 3. 8 4.12

Ans: 3

Explanation

Let the numbers are x and y.
As per the given conditions,
1. The sum of squares of two numbers is 60,
i.e., $x^2 + y^2 = 60$ ……..(1)

2. The square of difference between the two numbers is 44,

i.e., $(x - y)^2 = 44$ ------(2)

Eqn.(2) → $x^2 + y^2 - 2xy = 44$ ----(3)

Eqn.(1) – Eqn.(3) → $2xy = 60-44 = 16 \rightarrow xy = 8$.

Thus, the product of the two numbers is 8

26. For any two non-zero rational, numbers x and y, $x^5 \div y^5$ is equal to

1) $(x \div y)^1$ 2b)$(x \div y)^0$ 3)$(x \div y)^5$ 4)$(x \div y)^{10}$

Ans:3. {The given sum can also be written as $\left(\frac{x}{y}\right)^5$ }

27. The value of $(16)^{0.16} \times (16)^{0.09}$ is :

1. 4 2. 3 3. 2 4.6

Ans: 3

Explanation

Ans: $(16)^{0.16} \times (16)^{0.09} = 16^{0.25} = (16)^{1/4} = (2^4)^{1/4} = 2$

28. There is sufficient food for 400 persons for 31 days. After 28 days, 280 persons leave the place. The number of days for which the balance food will last to feed the remaining persons is

1.5 2. 10 3.15 4.9

Ans: 2

Explanation

Quantity of total food available = 400x 31
Food consumed in first 28 days = 400x28
∴ Balance quantity of food available after 28 days = 400x31-400x28
Number of persons left after 28days = 280;
Balance persons available = 400-280 =120
The number of days for which balance food will last = $\frac{(400x31-400x28)}{120}$ = 10

29. A tank can be filled in 9 hours. But due to a leak it takes one hour longer to be filled. if thetank is full, in what time will it get empty due to leak?

1. 30 hours 2. 90 hours 3. 45 hours 4. 60hours

Ans: 2

Explanation
Time taken to fill = 9hr
Time taken to fill due to a leak = 9+1 = 10hrs
∴Leak rate = $\frac{1}{9} - \frac{1}{10}$
∴ Leak rate = $\frac{10-1}{90} = \frac{1}{90}$
∴90 hrs

30. A train crosses a railway bridge 200 m long at a speed of 90 km per hour in 20 seconds. The length of the train is

1. 300 metre 2. 500 metre 3. 180 metre 4.250 metre

Ans:1

Explanation
Let L_t = length of train
L_b = length of bridge
As per given condition, time taken to cross the bride, t = $\frac{L_t+L_b}{v} = \frac{L_t + 200}{90\times\frac{5}{18}} = 20$

$\frac{L_t + 200}{25} = 20$
∴L = 300

31. The base of a rectangular solid is a square, and its height is twice its side of the bottom. If its volume is 1024 cm^3, then surface area of the solid is :

1. 560 cm^2 2. 640 cm^2 3.80 cm^2 4. 720 cm^2

Ans: 2

Explanation
Let side of the box = a. It is given: Height, h = 2a
$V = a^2h = 2a^3 = 1024$
$\therefore a^3 = 512 = 8^3$
∴a = 8
Surface area, S = 2(ℓb + bh + ℓh)
∴ 2 (8×8×8×16 + 8 + 16)
∴2(64 + 128 + 128) = 2 × 320
= 640

32. If volume and surface area of a sphere are numerically the same, then its radius is :

1. 1 2. 2 3. 3 4. 4

Ans: 3

Explanation

Given: Volume and surface area of a sphere are numerically same.

i.e., $\frac{4}{3}\pi r^3 = 4\pi r^2 \rightarrow r^3 = 3r^2 \therefore r = 3$

33. A can finish a certain journey in 10 hours at a speed of 48 km/hr. In order to cover the same distance in 8 hours, the speed of the car must be increased by :

1.6 km/hr 2.7.5 km/hr 3. 12 km/hr 4.15 km/hr

Ans:3

Explanation
Let the desired speed be V.
For the same distance, speed x time taken to cover the distance remains same.
i.e., $speed_1$ x $time_1$ = $speed_2$ x $time_2$
i.e., 10 × 48 = V x8

$\therefore$ V = 60

i.e ., Inc .in speed is (60 -48), $\therefore$ Speed is to be increased by 12 km/hr

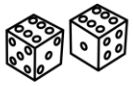
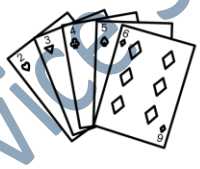
34. Find the probability of getting a head in a throw of a coin-

1. $\frac{1}{2}$ 2. 1 3. 2 4. None of these

Ans: 1

Explanation
The possibilities are H or T.
The probability of getting a head in a throw of a coin = $\frac{1}{2}$.
Below Table 1 shows some examples of finite sample spaces

Table 1 : Some examples of finite sample spaces.

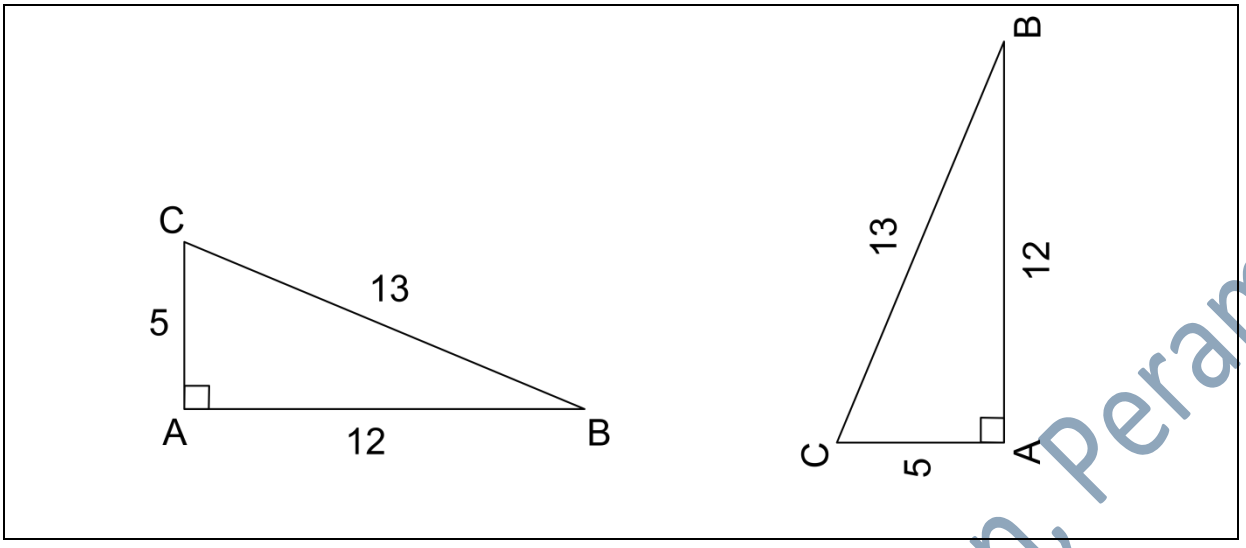
Sl.No	Random experiment	Sample space	Number of sample points in S
1	One coin is tossed 	S = {H, T}	n(S) = 2
2	Two coins are tossed 	S = {HH, HT, TH, TT}	n(S) = 4
3	Three coins are tossed 	S = {HHH, HHT, HTH, THH, HTT, THT, TTH, TTT}	n(S) = 8
4	A die is thrown 	S = { 1, 2, 3, 4, 5, 6 }	n(S) = 6
5	Two dice are thrown 	S = {(1,1), (1,2), (1,3), (1,4), (1,5), (1,6), (2,1), (2,2), (2,3), (2,4), (2,5), (2,6), (3,1), (3,2), (3,3), (3,4), (3,5), (3,6), (4,1), (4,2), (4,3), (4,4), (4,5), (4,6), (5,1), (5,2), (5,3), (5,4), (5,5), (5,6), (6,1), (6,2), (6,3), (6,4), (6,5), (6,6)}	n(S) = 36
6	A plain card is drawn from a pack bearing numbers from 1 to 25 	S = { 1, 2, 3, 4, ..., 25 }	n(S) = 25
7	A playing card is drawn from a well shuffled pack of 52 playing cards. 	Diamond : Ace, 2, 3, 4, 5, 6, 7, 8, 9, 10, Jack, Queen, King Spade : Ace, 2, 3, 4, 5, 6, 7, 8, 9, 10, Jack, Queen, King Heart : Ace, 2, 3, 4, 5, 6, 7, 8, 9, 10, Jack, Queen, King Club : Ace, 2, 3, 4, 5, 6, 7, 8, 9, 10, Jack, Queen, King	n(S) = 52

35 A triangle has sides of 5 cm, 12cm and 13 cm. The length of the perpendicular from the vertex to the smallest side is

1. 12cm 2. 5cm 3. 13cn 4. 8.5cm

Ans:1

Explanation



36. The geometric mean (GM) of 1, 2, 4, 5, 6 is

1. 1 2. 4 3. 8 4. 16

Ans: 2.

Explanation

$(1 \times 2 \times 3 \times 4 \times 5 \times 6)^{1/5} = 720^{1/5} =$

37. The mode of the series

2, 3, 2, 5, 3, 2, 2, 3, 5 is

1. 2 2. 3 3. 5 4. 3

Ans:1

Explanation

The given 9 numbers are written in increasing order →2 , 2 , 2 , 2 , 3 , 3 , 3 , 5 , 5.

The most repeating number is 2. Hence, 2 is the mode of the series.

38. The missing figure in the question $\frac{3}{9} x \frac{?}{6} x \frac{3}{15} = \frac{1}{18}$ is :

1. 6 2. 5 3. 4 4. 3

Ans:2

Explanation

Let the missing number be X.

The given sum is :$\frac{3}{9} . \frac{X}{6} . \frac{3}{15} = \frac{1}{18}$

$X = \frac{1}{18} \times \frac{9 \times 6 \times 15}{3 \times 3} = 5$

39. If $\frac{\log 16}{\log 2} = x$, then value of x is :

1. 4 2. $\frac{1}{3}$ 3. 3 4. 5

Ans:3

Explanation

$\log\frac{16}{2} = 8 = \log 2^3 = 3\log_2 = 3$

40. If diameter of a circle increases by 30%, by what percent will the area of the circle increase?

1. 30% 2. 69% 3. 90% 4. 138%

Ans: 2

Explanation

r→ 1.3r ,
∴A→ 1.69 r^2
∴ Increase in area A = 69%.

41. A and B together can do a piece of work in 10 days. B and C together can do it in 12 days, while A and C together can do it in 15 days. C alone can completer it in :

1. 50 days 2. 40 days 3. 30 days 4. 20 days

Ans:2

Explanation

Let the number days taken by A, B and C to finish the work individually be a, b and c days respectively;

$$\therefore \frac{1}{a} + \frac{1}{b} + \frac{1}{c} = \frac{1}{2}\left[\frac{1}{10} + \frac{1}{12} + \frac{1}{15}\right]$$

$$\frac{1}{c} = \frac{1}{a} + \frac{1}{b} + \frac{1}{c} - \left[\frac{1}{a} + \frac{1}{b}\right] = \frac{1}{2}\left[\frac{1}{10} + \frac{1}{12} + \frac{1}{15}\right] - \frac{1}{10} = \frac{1}{2}\left[\frac{6+5+4}{60}\right] - \frac{1}{10}$$

$$= \frac{15}{120} - \frac{1}{10} = \frac{15-12}{120} = \frac{3}{120} = \frac{1}{40}$$

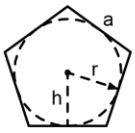
42. The side of regular hexagon is a. Its area is

1. $\frac{3\sqrt{3}}{2}a^2$ sq. units
2. $\frac{\sqrt{3}}{2}a^2$ sq. units
3. $\frac{2\sqrt{3}}{2}a^2$ sq. units
4. $6\sqrt{3}a^2$ sq. units

Ans: 1

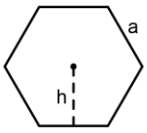
Explanation

Area of regular hexagon = Area of 6 equilateral triangles of side a = $6\times\frac{\sqrt{3}}{4}a^2 = 3\frac{\sqrt{3}}{2}a^2 = 1.5\frac{\sqrt{3}}{2}a^2$



Pentagon

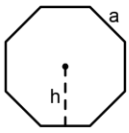
$A = \frac{5ar}{2}$



Hexagon

$A = 1.5\sqrt{3}a^2$

$A = \frac{P.h}{2}$



Octagon

$A = 4.828\ a^2$

$\approx 3.314\ h^2$

where, A = area
P = perimeter
h = apothem
a = side
r = Inradius = h

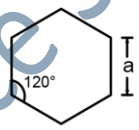
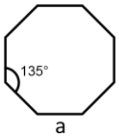
Shape	Figure	Perimeter, P in linear units	Area, A in square units
Pentagon	 r = apothem	P = 5a	$A = \frac{5ar}{2}$ $A = \frac{\sqrt{25 + 10.\sqrt{5}}}{4} a^2$ $\approx 1.72\ a^2$ $r = \frac{\sqrt{25 + 10.\sqrt{5}}}{10} a$ $= 0.688\ a$ where, $\sqrt{5} = 2.236$
Hexagon		P = 6a	$A = 1.5\sqrt{3}a^2$ $= 2.598\ a^2$ $\approx 2.6\ a^2 = 3.464\ h^2$ where, $\sqrt{3} = 1.732$
Octagon		P = 8a	$A = 2(1 + \sqrt{2})\ a^2$ $= 4.828\ a^2$ $\approx 4.83\ a^2$ $\approx 3.314\ h^2$ where, $\sqrt{2} = 1.414$

Figure : P-H-O - Area and perimeter of pentagon, Hexagon and Octagon.

43. Two trains travel in opposite direction at 36 km/hr and 45 km/hr and a man sitting in slower train passes the faster train in 8 seconds. The length of the faster train is :

1. 50 m 2. 100 m 3. 120 m 4. 180 m

Ans: 4

Explanation

The relative speed for travelling in opposite directions = 36+45 = 81 kmph = $81 \times \frac{5}{18}$ m/s

The faster train crosses a man in the slower train in 8 seconds. (Hence, slower train length should not be taken into account).

The length of the faster train, i.e., distance = speed x time = $\frac{81 \times 5}{18} \times 8 = 180$m

44. x is a non- zero rational number. The product of the square of x and cube of x is equal to the

1) Second power of x 2)third power of x

3) fifth power of x 4)sixth power of x

Ans: 3 (Note: The sum is $x^2 . x^3 = x^5$)

45. 300 grams of sugar solution has 40% sugar in it. How much sugar should be added to make it 50% in the solution ?

1. 10 gm 2. 40 gm 3. 60 gm 4. 80 gm

Ans:3

Explanation

For the given condition,
water content = 180 gram (i.e., 60% of 300) and
sugar content = 120 gram (the balance amount, i.e., 40% of 300).

To make 50% sugar solution, the water content remains same, i.e., 180 gram and hence sugar content is to be 180 gram.
The present sugar content is 120 gram. Therefore 60 gram sugar is to be added.

46. The product of three consecutive numbers is always divisible by:

1. 4 2. 6 3. 8 4.

Ans: 2

47. An enterprising businessman earns an income of Re.1 on the first day of his business. On every subsequent day, he earns an income which is just double of that made on the previous day. On the 10^{th} day of business, his income is :

1. Rs.2^9 2. Rs. 2^{10} 3. Rs.10 4. Rs10^2

Ans: 1

48. The ratio of Meena's age to the age of her mother is 3:8. The difference of their age is 35 years. The ratio of their age after 5 years will be :

1. 26 : 61 2. 5:12 3. 38:43 4. 42:47

Ans: 1

Explanation

Let the age of Meena be x and her mother be y.
The ratio of Meena and her Mother's ages is: x:y = 3:8 and
The difference in their ages is: y – x = 35 ……(1)

x:y = 3:8 → 8x = 3y →x = $\frac{3y}{8}$

Substitute the value of x in Eqn.(1) → y – $\frac{3y}{8}$ = 35 → 8y-3y = 35x8 →5y = 280 ∴ y =56 and x =21. After 5 years their ages are 26 : 61.

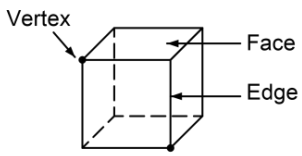
49. The number of vertices in a cube are

1. 6 2. 8 3. 4 4. 12

Ans: 2

Box. Euler criteria for a polyhedron

1. Polyhedron = solid of the space whose border is the union of the faces.
2. Faces = Flat figures that make up the polyhedron.
3. Edges = Meeting segments of the faces.
4. Vertices = Meeting points of the edges.
5. For all polyhedron is true : No. of Faces,F + No. of Vertices,V - No. of Edges,E = 2. (Euler criteria for polyhedron) i.e; F + V - E = 2.
6. A cube has 6 faces, 8 vertices and 12 edges.

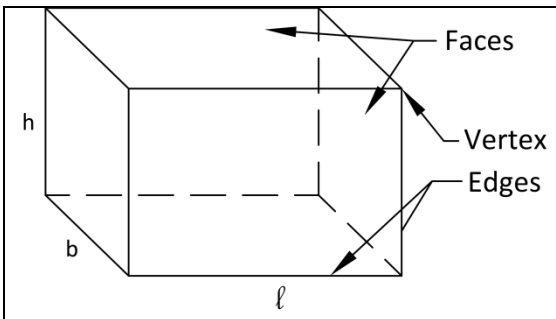


a. Features of polyhedron.

50. The number of faces of a cuboid is

1. 6 2. 8 3. 4 4. None

Ans: 1 (A cuboid figure is shown below and refer to Qn. 49 for a cube figure).



No.of faces = 6
No.of vertices = 8
No.of edges = 12

Figure:Cuboid.