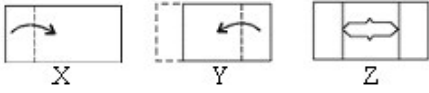


1. Choose the figure which most exactly and closely resembles the unfolded form of figure



- A.
- B.
- C.
- D.

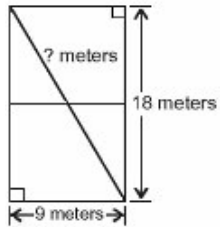
Right Answer:: B

2. A policeman goes straight 6 km eastwards, then turns right and goes straight 2 km and turns right again and goes straight 8 kms. In which direction is he from the starting point?

- A. North-East
- B. North-West
- C. South-East
- D. South-West

Right Answer:: D

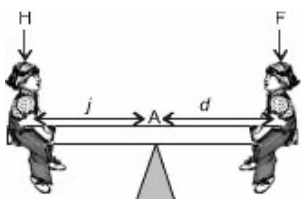
3. The dimensions and shape of a volleyball court are shown in this picture. What is the approximate distance of a serve that is hit diagonally from one corner of the court to the other?



- A. 27.0 meters
- B. 20.1 meters
- C. 15.6meters
- D. 12.7meters

Right Answer:: B

4. The seesaw shown is an example of a type of lever. A lever will balance when the product of the force (weight of one child) and the distance on one side of the fulcrum equals the product of the force (weight of the other child) and the distance on the other side. The fulcrum is at point A where the seesaw balances. **H** is the force applied at a distance **j** on one side of the fulcrum and **F** is the force applied at a distance **d** on the other side of the fulcrum. Which of the following equations represent this relationship?



- A. $Fd=Hj$

B. $FH=dj$

C. $\frac{F}{H} = \frac{d}{j}$

D. $\frac{F}{j} = \frac{d}{H}$

Right Answer:: A

5. A bag contains 25 paise, 10 paise and 5 paise coins in the ratio 1 : 2:3. If their total value is Rs. 30, the number of 5 paise coins is _____.

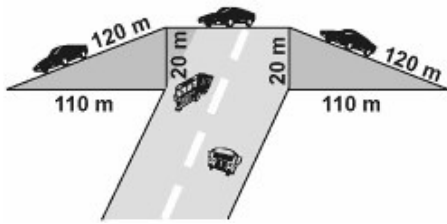
- A. 50
- B. 100
- C. 150
- D. 200

Right Answer:: C

Two triangular walls of a flyover have been used for advertisements from both sides.

The sides of each wall are 120 m, 110 m and 20 m. The advertisements yield an earning

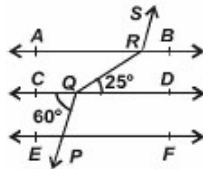
6. of Rs.100 per m² per year. Find the amount of revenue earned in one year. (Take $\sqrt{7} = 2.65$)



- A. Rs. 3,97,500
- B. Rs. 3,47,500
- C. Rs. 5,73,300
- D. Rs. 4,73,500

Right Answer:: A

7. In given figure, if $AB \parallel CD \parallel EF$, $PQ \parallel RS$, $\angle RQD = 25^\circ$ and $\angle CQP = 60^\circ$, then $\angle QRS$ is equal to _____.



- A. 85°
- B. 135°
- C. 145°
- D. 110°

Right Answer:: C

8. One evening before sunset two friends Sumit and Mohit were talking to each other face to face. If Mohit's shadow was exactly to his right side, which direction was Sumit facing?

- A. North
- B. South
- C. West
- D. None of these

Right Answer:: B

9. $0.12\bar{3}$ can be expressed in rational form as _____.

- A. $\frac{900}{111}$
- B. $\frac{111}{900}$
- C. $\frac{123}{10}$
- D. $\frac{121}{900}$

Right Answer:: B

10. If $N = \frac{\sqrt{\sqrt{5}+2} + \sqrt{\sqrt{5}-2}}{\sqrt{\sqrt{5}+1}} - \sqrt{3-2\sqrt{2}}$, then N equals _____.

- A. 1
- B. $2\sqrt{2}-1$
- C. $\frac{\sqrt{5}}{2}$
- D. $\frac{2}{\sqrt{\sqrt{5}+1}}$

Right Answer:: A

11. If $25^{x-1} = 5^{2x-1} - 100$, then the value of x is _____.

- A. 3
- B. 2
- C. 4
- D. 1

Right Answer:: B

12. If $x = 2 - \sqrt{3}$, then the value of $x^2 + \frac{1}{x^2}$ and $x^2 - \frac{1}{x^2}$ is _____.

- A. $14, 8\sqrt{3}$
- B. $-14, -8\sqrt{3}$
- C. $14, -8\sqrt{3}$
- D. $-14, 8\sqrt{3}$

Right Answer:: C

13. If 'a' and 'b' are rational numbers and $\frac{2 + \sqrt{3}}{2 - \sqrt{3}} = a + b\sqrt{3}$, then b = _____.

- A. 4
- B. 7
- C. 6
- D. 8

Right Answer:: A

14. If $a^{\frac{1}{2}} + b^{\frac{1}{2}} - c^{\frac{1}{2}} = 0$, then the value of $(a + b - c)^2$ is _____.

- A. 2ab
- B. 2bc
- C. 4ab
- D. 4ac

Right Answer:: C

15. If $\sqrt{\left(1 + \frac{27}{169}\right)} = \left(1 + \frac{x}{13}\right)$, then the value of x is _____.

- A. 1
- B. 3
- C. 5
- D. 7

Right Answer:: A

16. $ab + bc + ax + cx =$

- A. $(a + c)(x + b)$
- B. $(a - c)(x - b)$
- C. $(a + b)(x + c)$
- D. $(x + a)(a + b)$

Right Answer:: A

17. $x^{12} - y^{12} =$

- A. $(x - y)(x^2 + xy + y^2)(x + y)(x^2 - xy + y^2)(x^2 + y^2)(x^4 - x^2y^2 + y^4)$
- B. $(x + y)(x^2 - xy + y^2)(x + y)(x^2 - xy + y^2)(x^2 + y^2)(x^4 - x^2y^2 + y^4)$
- C. $(x + y)(x^2 + xy - y^2)(x + y)(x^2 - xy + y^2)(x^2 + y^2)(x^4 - x^2y^2 + y^4)$
- D. $(x - y)(x^2 - xy + y^2)(x + y)(x^2 - xy + y^2)(x^2 + y^2)(x^4 - x^2y^2 + y^4)$

Right Answer:: A

18. Anu had 6 pairs of shoes. She let Mohit borrow x pairs of shoes, and then she had 4 pairs left. Which equation models this solution?

- A. $6-x = 4$
- B. $6+x = 4$
- C. $6x = 4$
- D. $4x = 6$

Right Answer:: A

19. The option which is not a solution of the equation $2x + 3y = 6$, is _____.

- A. (3, 0)
- B. (0, 2)
- C. (-3, 4)
- D. (1, 1)

Right Answer:: D

20. Two distinct points in a plane determine _____ line.

- A. Unique
- B. Two
- C. Three
- D. None of these

Right Answer:: A

21. One set of ordered pair which belongs to a straight line represented by an equation $y = 2x-1$ is _____.

- A. (1, 1)
- B. (2, 1)
- C. (1, 2)
- D. (3,1)

Right Answer:: A

22. Point of intersection of the lines $x + y = 1$ and $2x + 2y = 4$ are

- A. (1, 1)
- B. (2, 2)
- C. No intersection point
- D. Many points

Right Answer:: C

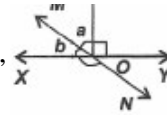
23. If diagonals of a square are equal, then they bisect each other at _____.

- A. 90°
- B. 60°
- C. 45°
- D. 30°

Right Answer:: A



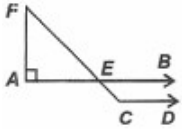
24. In the figure below, lines XY and MN intersect at O. If $\angle POY = 90^\circ$ and $a : b = 2 : 3$, then $\angle XON$ is equal to _____.



- A. 126°
- B. 130°
- C. 90°
- D. 180°

Right Answer:: A

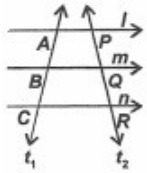
25. In the given figure, $AB \parallel CD$ and $\angle F = 30^\circ$. Then $\angle FCD$ is _____.



- A. 90°
- B. 120°
- C. 60°
- D. 45°

Right Answer:: B

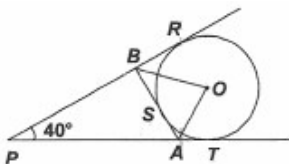
26. If I, m, n are three parallel lines and the transversals t_1 and t_2 cut the lines I, m, n at the points A, B, C and P, Q, R as shown in the figure, then _____.



- A. $AB/BC = PQ/QR$
- B. $AB/QR = BC/PQ$
- C. $AP/BQ = BQ/CR$
- D. $AB/PQ = AP/BQ$

Right Answer:: A

27. Triangle PAB is formed by three tangents to circle with centre O and $\angle APB = 40^\circ$, then angle AOB equals _____.



- A. 45°
- B. 50°
- C. 55°
- D. 70°

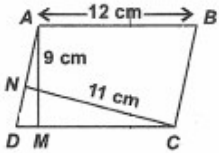
Right Answer:: D

28. The locus of a point equidistant from the three sides of a triangle is _____.

- A. Circumcentre
- B. Incentre
- C. Centroid
- D. Orthocentre

Right Answer:: B

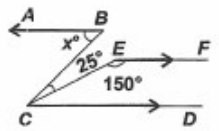
29. In parallelogram ABCD, AB = 12 cm. The altitudes corresponding to the sides AB and AD are respectively 9 cm and 11 cm. Find AD.



- A. $\frac{108}{11}$ cm
- B. $\frac{108}{10}$ cm
- C. $\frac{99}{10}$ cm
- D. $\frac{108}{17}$ cm

Right Answer:: A

30. In the figure, the value of x if $AB \parallel CD \parallel EF$, is _____.



- A. 45°
- B. 55°
- C. 60°
- D. 70°

Right Answer:: B

31. In the figure $\overline{AB} = \overline{AC}$, $\angle BAD = 30^\circ$, and $\overline{AE} = \overline{AD}$. Then x equals ____.

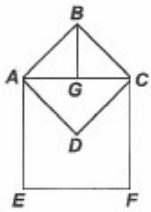
- A. $7\frac{1}{2}$
- B. 10°
- C. $12\frac{1}{2}$
- D. 15°

Right Answer:: D

In the given figure, ABCD and AEFC are squares. $\triangle ABG$ is a right angled

triangle. If $\triangle ABG$ has an area $\frac{1}{4}$ unit², then the area of the polygon

32. AEFC is _____.



- A. $\frac{3}{2}$ units²
- B. $\frac{1}{2}$ units²
- C. $\frac{1}{4}$ units²
- D. $\frac{3}{4}$ units²

Right Answer:: A

33. The edge of a cube is 20 cm. How many small cubes of 5 cm edge can be formed from this cube?

- A. 4
- B. 32
- C. 64
- D. 100

Right Answer:: C

34. A rectangular field has its length and breadth in the ratio 5: 3. Its area is 3.75 hectares. The cost of fencing it at Rs.5 per metre is _____.

- A. Rs.400
- B. Rs.4000
- C. Rs.1000
- D. Rs.500

Right Answer:: B

35. The area of an isosceles triangle having base x cm and one side y cm is _____.

- A. $\frac{x}{2} \sqrt{y^2 - \frac{x^2}{2}} \text{ cm}^2$
- B. $\frac{x}{2} \sqrt{\frac{4y^2 - x^2}{4}} \text{ cm}^2$
- C. $\frac{x^2 - y^2}{4} \text{ cm}^2$
- D. $x \sqrt{4y^2 - x^2} \text{ cm}^2$

Right Answer:: B

36. The median of the following numbers 25, 27, 21, 23, 24 is _____.

- A. 21
- B. 23
- C. 25
- D. 24

Right Answer:: D

37. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of drawing '10' of a black suit.

- A. $\frac{1}{26}$
- B. $\frac{2}{26}$
- C. $\frac{3}{26}$
- D. $\frac{4}{26}$

Right Answer:: A

38. The mean, median and mode of the following number 7,4,3,5,6,3,3,2,4,3,4,3,3,4,4,3,2,2,4,3,5,4,3,4,3,4,3,1,2,3 are _____.

- A. 3.47,3,3
- B. 3, 3, 3
- C. 4, 3, 3
- D. 5, 4, 3

Right Answer:: A

39. Two dice are thrown simultaneously. The probability of getting a multiple of 2 on one die and a multiple of 3 on the other is _____.

- A. $\frac{5}{36}$
- B. $\frac{5}{12}$
- C. $\frac{11}{36}$
- D. $\frac{1}{12}$

Right Answer:: C

40. Cards marked with the numbers 2 to 101 are placed in a box and mixed thoroughly. One card is drawn from this box. Find the probability that the number on the card is

A number which is a perfect square.

- A. $\frac{9}{100}$
- B. $\frac{5}{100}$
- C. $\frac{4}{100}$
- D. $\frac{7}{100}$

Right Answer:: A

41. Choose from amongst the alternatives the box that shall be formed by folding this figure.



- A.
- B.
- C.
- D.

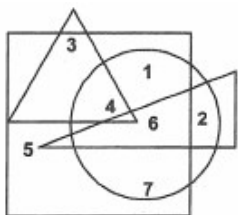
Right Answer:: D

42. If the first three letters of the word 'COMPREHENSION' are reversed, then last three letters are added and then the remaining letters are reversed and added, then which letter will be exactly in the middle?

- A. H
- B. R
- C. S
- D. N

Right Answer:: C

43. Which of the following numbers present only in one figure ?



- A. 1
- B. 3
- C. 5

D. 7

Right Answer:: C

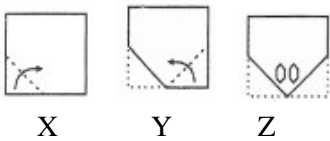
44. Find the correct alternative.

Taste: Tongue:: Heat :?

- A. Cold
- B. Skin
- C. Cooking
- D. Sun

Right Answer:: B

45. Three figures X, Y and Z show a sequence of folding of a piece of paper. Fig. (Z) shows the manner in which the folded paper has been cut. These three figures are followed by four answer figures. You have to choose a figure which would most closely resemble the unfolded form of fig (Z).



- A.
- B.
- C.
- D.

Right Answer:: B

46. A cloth merchant has announced 25% rebate in prices. If one needs to have a rebate of Rs.40, then how many shirts each costing Rs.32, he should purchase?

- A. 6
- B. 5
- C. 10
- D. 7

Right Answer:: B

47. A 150 metres long train crosses a man walking at the speed of 6 km/hr in the opposite direction in 6 seconds. The speed of the train in km/hr is _____.

- A. 66
- B. 84
- C. 96
- D. 106

Right Answer:: B

If 1 is added to the denominator of a fraction, the fraction becomes $\frac{1}{2}$.

48. If 1 is added to the numerator, the fraction becomes 1, the fraction is _____.

- A. $\frac{4}{7}$
- B. $\frac{5}{9}$
- C. $\frac{2}{3}$
- D. $\frac{10}{11}$

Right Answer:: C

49. Bhajan Singh purchased 120 reams of paper at Rs.80 per ream. He spent Rs.280 on transportation, paid octroi at the rate of 40 paise per ream and paid Rs.72 to the coolie. If he wants to have a gain of 8%, what must be the selling price per ream?

- A. Rs. 86
- B. Rs.87.48
- C. Rs.89
- D. Rs.90

Right Answer:: D

50. A man rows downstream 30 km and upstream 18 km, taking 5 hours each time. The velocity of current is _____.

- A. 1.2 km/hr
- B. 6 km/hr
- C. 3.6 km/hr
- D. 2.4 km/hr

Right Answer:: A