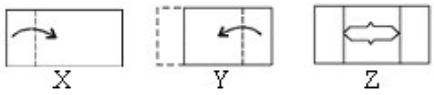
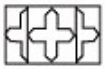
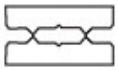
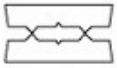
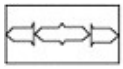
1. Choose the figure which most exactly and closely resembles the unfolded form of figure



A. 

B. 

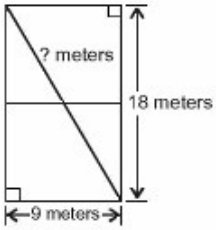
C. 

D. 

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?

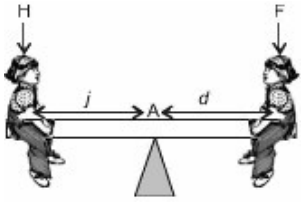
A. North-East
B. North-West
C. South-East
D. South-West

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

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?

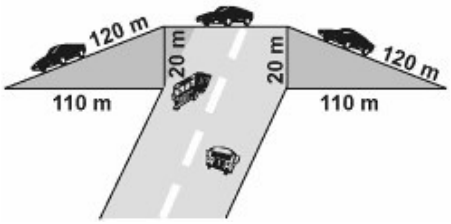


A. $Fd=Hj$
B. $FH=dj$
C. $\frac{F}{H}=\frac{d}{j}$
D. $\frac{F}{j}=\frac{d}{H}$

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 _____.

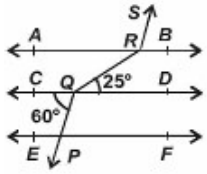
A. 50
B. 100
C. 150
D. 200

6. Two triangula r walls of a flyover have been used for advertisem ents from both sides. The sides of each wall are 120 m, 110 m and 20 m. The advertisem ents yield an earning of Rs. 100 per m^2 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

7. In given figure, if AB || CD || EF, PQ || RS, ÐRQD = 25° and ÐCQP = 60°, then ÐQRS is equal to _____.



A. 85°
B. 135°
C. 145°
D. 110°

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

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

A. $\frac{900}{111}$
B. $\frac{111}{900}$
$\frac{123}{}$

C. 10

D. $\frac{121}{900}$

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. $\frac{2}{\sqrt{\sqrt{5}+1}}$

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

A. 3

B. 2

C. 4

D. 1

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. $-14,\ 8\sqrt{3}$

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

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

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

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)

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. $(x-y)(x^2-xy+y^2)(x+y)(x^2-xy+y^2)(x^2+y^2)(x^4-x^2y^2+y^4)$

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

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)

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

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

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)

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

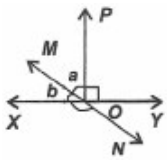
A. (1, 1)
B. (2, 2)

C. No intersection point
D. Many points

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

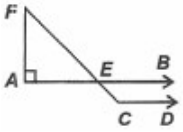
A. 90°
B. 60°
C. 45°
D. 30°

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 _____.



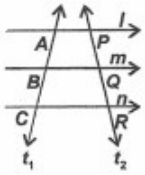
A. 126°
B. 130°
C. 90°
D. 180°

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



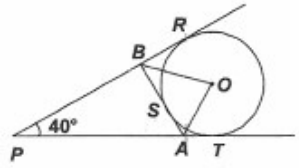
A. 90°
B. 120°
C. 60°
D. 45°

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

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

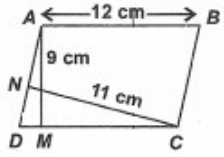


A. 45°
B. 50°
C. 55°
D. 70°

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

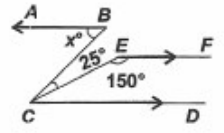
A. Circumcentre
B. Incentre
C. Ceritroid
D. Orthocentre

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. $\frac{108}{17}cm$

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



A. 45°
B. 55°
C. 60°
D. 70°

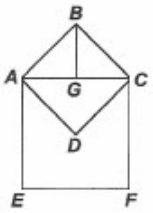
31. In the figure $\overline{AB} = \overline{AC}, \angle BAD = 30^\circ$, and $\overline{AE} = \overline{AD}$. Then x equals ____.

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

In the given figure, ABCD and AEFC are squares. ΔABG is a right angled

triangle. If ΔABG has an area $\frac{1}{4}$ unit ^{2}, then the area of the polygon

32. AEFCD is _____.



A. $\frac{3}{2} units^2$

B. $\frac{1}{2} units^2$

C. $\frac{1}{4} units^2$

D. $\frac{3}{4} units^2$

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

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

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

A. $\frac{x}{2}\sqrt{y^2 - \frac{x^2}{2}} cm^2$

B. $\frac{x}{2}\sqrt{\frac{4y^2 - x^2}{4}} cm^2$

C. $\frac{x^2 - y^2}{4} cm^2$

D. $x\sqrt{4y^2 - x^2} cm^2$

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

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

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. $\frac{4}{26}$

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

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 _____.

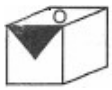
A. $\frac{5}{36}$
B. $\frac{5}{12}$
C. $\frac{11}{36}$
D. $\frac{1}{12}$

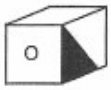
40. Cards marked with the numbers 2 to 101 are placed in a box and mixed throughly. One card is drawn from this box. Find the probability that the number on the card is

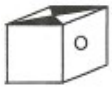
A number which is a perfect square.

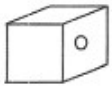
A. $\frac{9}{100}$
B. $\frac{5}{100}$
C. $\frac{4}{100}$
D. $\frac{7}{100}$

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

A. 

B. 

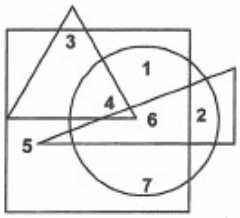
C. 

D. 

42. If the first three letters of the word 'C O M P R E H E N S I O N' 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

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



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

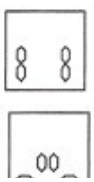
44. Find the correct alternative.

Taste: Tongue:: Heat :**?**

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

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).

X Y Z

A. 

B. 

C. 

D. 

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

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

48. If 1 is added to the denominato r of a fraction, the fraction becomes $\frac{1}{2}$. 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. $\frac{10}{11}$

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

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