

1. Determine the rational number represented by

$$0.\overline{75}$$

(a) $25/33$

(c) $45/33$

(b) $75/100$

(d) $35/33$

2. Put π and $22/7$ in order relation.

(a) $\pi > 22/7$

(c) $\pi = 22/7$

(b) $\pi < 22/7$

(d) None

3. The value of $\sqrt{20} - \sqrt{225} + \sqrt{80}$

(a) $4\sqrt{5}$

(c) $3\sqrt{5}$

(b) $64\sqrt{5}$

(d) $8\sqrt{5}$

4. A wall in the form of a rectangle has base 15m and height 10m. If the cost of painting the wall is Rs. 16 per square metre, find the cost for painting the entire wall.

(a) 1400

(c) 2400

(b) 3100

(d) 5400

5. The dimensions of a rectangular metal sheet are $4\text{m} \times 3\text{m}$. The sheet is to be cut into square sheets each of side 4 cm. Find the number of square sheets.

(a) 7500

(c) 9500

(b) 7700

(d) 9700

6. Find the base of a parallelogram if its area is 40 cm^2 and altitude is 15 cm.

(a) $\frac{2}{3}$ cm

(c) $\frac{1}{3}$ cm

(b) $\frac{5}{3}$ cm

(d) $\frac{8}{3}$ cm

7. If the lengths of the sides of a triangle are 11 cm, 60 cm and 61 cm, find the area and perimeter of the triangle.

(a) 330, 132

(c) 331, 131

(b) 125, 64

(d) 312, 128

8. A wire of length 264 cm is cut into two equal portions. One portion is bent in the form of a circle and the other in the form of an equilateral triangle. Find the ratio of the areas enclosed by them

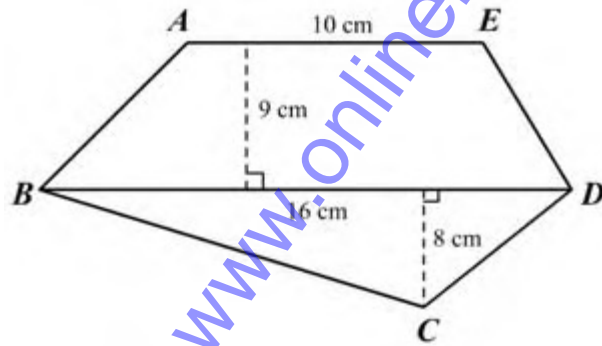
(a) $21\sqrt{3} : 21$

(c) $21\sqrt{3} : 19$

(b) $21\sqrt{3} : 18$

(d) $21\sqrt{3} : 22$

9. Find the area of the figure



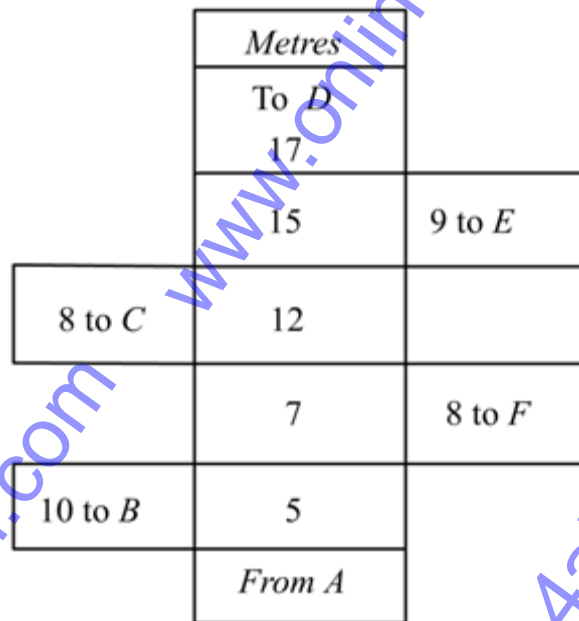
(a) 181

(c) 181 cm^2

(b) 192 cm^2

(d) 192

10. A surveyor has sketched the measurements of a land as below.



Find the area of the land

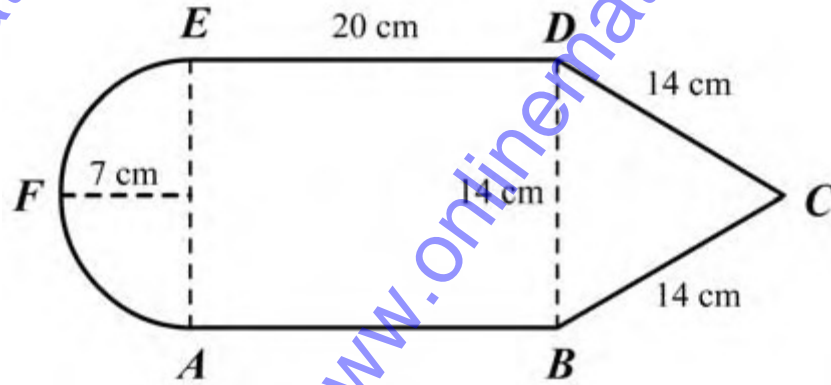
(a) 213 m^2

(c) 310 m^2

(b) 510 m^2

(d) 220 m^2

11. Find the area of the design as shown below.



(a) 441.268 cm^2

(c) 132.568 cm^2

(b) 228.598 cm^2

(d) 441.368 cm^2

12. A cow is tied up for grazing at one outside corner of a square building of length 4.2m. If the length of the rope is 4.9 m, find the area the cow can graze..

(a) 868.325 m^2

(c) 428.368 m^2

(b) 57.365 m^2

(d) 72.587 m^2

13. Write the number 0.000001024 in scientific notation

(a) 0.1024×10^{-5}

(c) 1.024×10^{-6}

(b) 10.24×10^{-7}

(d) 102.4×10^{-8}

14. Write the number 1.423×10^{-6} in decimal form

(a) 0.000001423

(c) 0.00001423

(b) 0.0001423

(d) 0.0000001423

15. Perform the calculation and write the answer of the following in scientific notation. $(2000)^2 \div (0.0001)^4$

(a) 4×10^{21}

(c) 4×10^{23}

(b) 4×10^{19}

(d) 4×10^{22}

16. Write $3 = \log_3 729$ in exponential form

(a) $3^9 = 729$

(c) $9^2 = 729$

(b) $9^3 = 729$

(d) None of these

17. Change $2 = 64^{1/6}$ to logarithmic form

(a) $1/6 = \log 36$

(c) $1/6 = \log_{64} 2$

(b) $\log_{64} 2$

(d) $\log 36$

18. Evaluate : $\text{Log}_9(1/27)$

(a) $3/2$

(c) $1/3$

(b) $3/5$

(d) $5/3$

19. Find the value of

$$\frac{175.23 \times 22.159}{1828.46}$$

(a) 2.123

(c) 1.122

(b) 2.122

(d) 3.122

20. Obtain the set builder representation of the set
 $A = \{1, 1/2, 1/3, 1/4, 1/5, 1/6\}$

(a) $A = \{x : x = 1/n, n \in \mathbb{N} \text{ and } n < 4\}$

(c) $A = \{x : x = 1/n, n \in \mathbb{N} \text{ and } n < 6\}$

(b) $A = \{x : x = 1/n, n \in \mathbb{N} \text{ and } n < 5\}$

(d) $A = \{x : x = 1/n, n \in \mathbb{N} \text{ and } n < 7\}$

21. {Prime numbers which have 4 as a factor} is a

(a) Empty set

(c) Singleton set

(b) Set of all prime numbers

(d) $\{2, 3, 5, 7, 11\}$

22. Out of 45 houses in a village 25 houses have T.V and 30 houses have radio. Find how many of them have both.

(a) 40

(c) 10

(b) 20

(d) 50

23. In a class of 35 students, 28 students passed in History, 22 in Mathematics and 18 in both Subjects. How many failed in both subjects? Using Venn Diagram, find the number of students who passed in (i) History alone and (ii) Mathematics alone.

(a) 10, 4

(c) 5, 4

(b) 6, 4

(d) none of these

24. Subtract $2x^3 - 3x^2 - 1$ from $x^3 + 5x^2 - 4x - 6$

(a) $x^3 + 8x^2 - 4x - 5$

(c) $-x^3 - 8x^2 - 4x - 5$

(b) $-x^3 + 8x^2 - 4x + 5$

(d) $-x^3 + 8x^2 - 4x - 5$

25. Find the product of $2x + 3y$ and $x^2 - xy + y^2$?

(a) $2x^3 - x^2y - xy^2 + 3y^3$

(c) $2x^3 + x^2y - xy^2 - 3y^3$

(b) $2x^3 + x^2y - xy^2 + 3y^3$

(d) $-2x^3 + x^2y - xy^2 + 3y^3$

26. Expand $(11a - 7b)^2$

(a) $121a^2 - 154ab + 49b^2$

(c) $121a^2 + 154ab + 49b^2$

(b) $121a^2 + 154ab + 49b^2$

(d) $121a^2 - 154ab - 49b^2$

27. If the values of $a + b$ and $a - b$ are 7 and 4 respectively, find the values of $a^2 + b^2$ and ab .

(a) $65/7, 33/4$

(c) $65/2, 33/4$

(b) $65/5, 33/4$

(d) $65/3, 33/4$

28. The factors of $x^2 - 2xy - x + 2y$.

(a) $(x-2y)(x-2)$

(c) $(x-2y)(x-3)$

(b) $(x-2y)(x-1)$

(d) $(x-2y)(x-4)$

29. What is the remainder when $2x^3 + 3x^2 + 5x + 2$ is divided by $x+1$

(a) -1

(c) -2

(b) 2

(d) -6

30. For every real number x , does $x^2 - 1 > 0$?

(a) True

(c) False

(b) can not conclude

(d) None of these

31. If two lines intersect, then the vertically opposite angles are

(a) Equal

(c) Not equal

(b) Perpendicular

(d) None of these

32. If a side of a triangle is produced, then the exterior angle so formed is equal to the sum of the interior opposite angles.

The above statement is

(a) True

(c) Neither true nor false

(b) False

(d) None of these

33. The sum of any two sides of a triangle is greater than the third side.

The above statement is

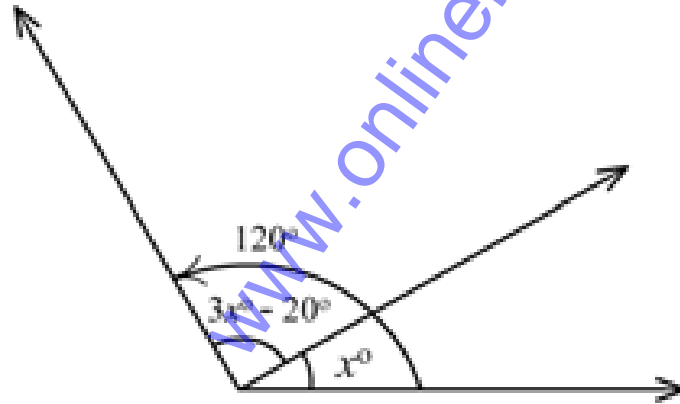
(a) True

(c) Neither true nor false

(b) False

(d) None of these

34. What is the value of "x" in the below figure?



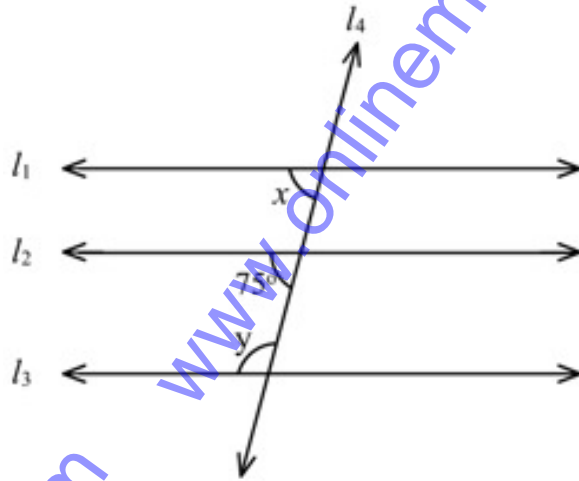
(a) 70

(c) 20

(b) 100

(d) 35

35. Find the value of "x" and "y" in the following figure?



(a) 75, 100

(c) 80, 105

(b) 75, 105

(d) 50, 130

36. The supplement of the angle 45 degree is

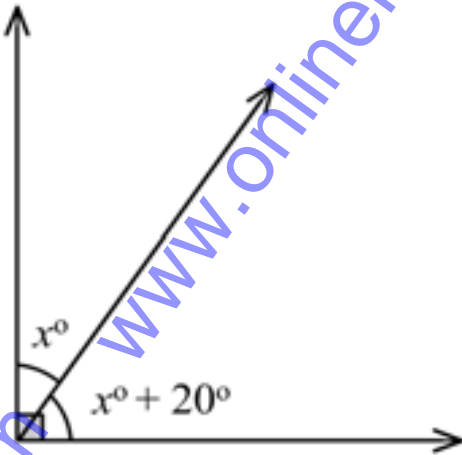
(a) 90

(c) 85

(b) 180

(d) 135

37. Find the smaller and larger angles in the following figure



(a) 35, 55

(c) 30, 60

(b) 45, 45

(d) 20, 70

38. Find the horizontal between the points $(-3, -4)$ and

(a) 2

(c) 4

(b) 1

(d) 6

39. When slope of the line is greater than zero

(a) Falling line

(c) Rising line

(b) Parallel to x- axis

(d) parallel to y- axis

40. Find the slope of the line passing through (5,6) and (15,9)

(a) $4/10$

(c) $5/10$

(b) $3/10$

(d) $7/10$

41. Find the distance between the points $A(-15, -3)$ and $B(7, 1)$.

(a) $10\sqrt{5}$

(c) $8\sqrt{5}$

(b) $9\sqrt{5}$

(d) $7\sqrt{5}$

42. If $\sin\theta = 7/25$, then $\tan\theta$

(a) $7/25$

(c) $7/24$

(b) $7/18$

(d) $7/28$

43. If $\operatorname{cosec}A = \sqrt{2}$, then the value of $\sin A + \cos A$

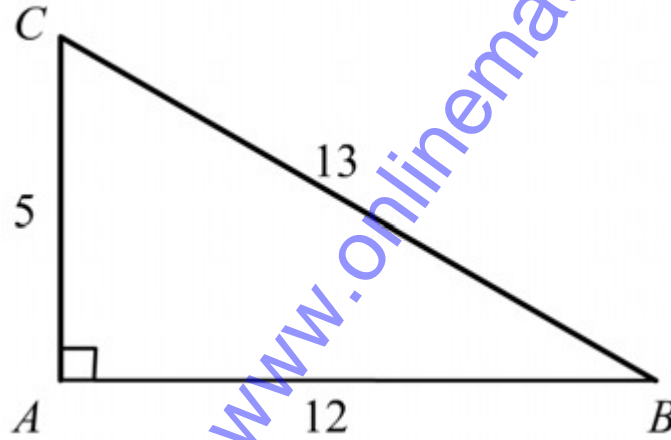
(a) $\sqrt{2}$

(c) $1/3$

(b) $1/2$

(d) 2

44. Find the value of $\sin B$ in the following figure



(a) $5/12$

(c) $13/12$

(b) $12/13$

(d) $5/13$

45. Find the geometric mean between two segments of lengths 9 cm and 3 cm

(a) 3.2

(c) 1.7

(b) 5.2

(d) 1.9

46. Find the arithmetic mean between 4 and 6

(a) 4

(c) 5

(b) 3

(d) 1

47. Calculate the mean of the data 9, 11, 13, 15, 17, 19.

(a) 14

(c) 34

(b) 24

(d) 48

48. Find the median of 29, 23, 25, 29, 30, 25, 28

(a) 66

(c) 33

(b) 28

(d) 24

49. When 6 coins are tossed, what is the probability for getting 6 heads?

(a) $1/32$

(c) $1/65$

(b) $1/33$

(d) $1/64$

50. Two fair dice are rolled. What is the probability of getting the product 36?

(a) $1/32$

(c) $1/36$

(b) $1/34$

(d) $1/38$

Answers

- | | | | | | |
|-------|-------|-------|-------|-------|-------|
| 1. a | 2. b | 3. a | 4. c | 5. a | 6. d |
| 7. a | 8. d | 9. c | 10. a | 11. d | 12. b |
| 13. c | 14. a | 15. d | 16. b | 17. c | 18. a |
| 19. b | 20. d | 21. a | 22. c | 23. a | 24. d |
| 25. b | 26. a | 27. c | 28. b | 29. c | 30. c |
| 31. a | 32. a | 33. a | 34. d | 35. b | 36. d |
| 37. a | 38. d | 39. c | 40. b | 41. a | 42. c |
| 43. a | 44. d | 45. b | 46. c | 47. a | 48. b |
| 49. d | 50. c | | | | |