

1. Find the 5th term of the Geometric progression 64, 16, 4,?

(a) $1/4$

(c) $4/5$

(b) $1/2$

(d) $3/8$

2. Find the sum of first 11 terms of the Arithmetic progression 3, 8, 13,

(a) 408

(c) 508

(b) 308

(d) 808

3. Find the sum of $11+12+13+\dots+31$

(a) 551

(c) 621

(b) 444

(d) 441

4. Find the total area of the squares whose sides are 20cm, 21cm ...27cm respectively

(a) 6085

(c) 6585

(b) 5085

(d) 8550

5. The radius of the top of a bucket is 18cm and that of the bottom is 6cm. Its depth is 24 cm. Find the capacity of the bucket.

(a) 3744π

(c) 7344π

(b) 4744π

(d) 1744π

6. A hemispherical bowl of radius 30cm is filled with soap paste. If this paste is made into cylindrical soap cakes each of radius 5cm and height 2cm, how many cakes do we get?

(a) 560

(c) 360

(b) 460

(d) 580

7 If $\epsilon = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $A = \{2, 4, 6\}$, $B = \{1, 2, 3, 5\}$ find $(A \cup B)$

(a) $\{7, 9, 10\}$

(c) $\{7, 10\}$

(b) $\{7\}$

(d) $\{7, 8, 9, 10\}$

8. In a class of 35 students 18 speak Tamil, 12 speak Hindi and 15 speak English. 2 students speak Tamil and Hindi. 4 Hindi and English and 5 speak English and Tamil. Calculate the number of students who speak all three languages. Also find the number of students Hindi and English but not Tamil

(a) 4

(c) 3

(b) 12

(d) 6

9. A bag contains ten, five and two rupees currencies. The total number of currencies is 20 and the total value of money is \$125. If the second and third sorts of currencies are interchanged the value will be decreased by \$6. Find the number of currency in each sort.

(a) 10,5,2

(c) 5,5,2

(b) 2,5,9

(d) 10,9,6

10. One of the factors of the equation $2x^3+x^2-5x+2$

(a) $(x-5)$

(c) $(x-6)$

(b) $(x-1)$

(d) $(x+1)$

11. Find the area of the following term $20x^3, 36x^6$.

(a) $4x^5$

(c) $180x^6$

(b) $120x^2$

(d) $20x^3$

12. Simplify the following

$$\frac{p^2-1}{p} \times \frac{p^3}{p-1} \times \frac{1}{p+1}$$

- (a) 0
(b) p^2
(c) 1
(d) None

13. Find the square root by factor method 9801

- (a) 59
(b) 89
(c) 41
(d) 99

14. solve $6x^2+x-1=0$

- (a) $(-1/2, 1/3)$
(b) (3,2)
(c) $(1/2, 1/3)$
(d) None

15. The product of two consecutive odd number is 323. Find them

(a) 13,15

(c) 17,19

(b) 11,13

(d) 21,23

16. Find two consecutive even integers whose product is 224

(a) 14 and 16

(c) 13 and 18

(b) 12 and 22

(d) None of these

17. The length of the hall is 3m more than its width. The numerical value of its area is equal to the numerical value of its perimeter. Find the length and width of the hall.

(a) 7m and 9m

(c) 6m and 5m

(b) 6m and 3m

(d) 8m and 7m

18. Find the area of the sector of a circle with radius 4 cm and of angle 30° . Also, find the area of the corresponding major sector approximately (use $\pi = 3.14$).

(a) 43.2

(c) 46.1

(b) 42.3

(d) 45.2

19. $OACB$ is a quadrant of a circle with centre O and radius 3.5 cm. If $OD = 2$ cm, find the area of the shaded region.

(a) $49/8 \text{ cm}^2$

(c) $47/8 \text{ cm}^2$

(b) $45/8 \text{ cm}^2$

(d) $9/8 \text{ cm}^2$

20. The wheels of a car are of diameter 80 cm each. How many complete revolutions does each wheel make in 10 minutes when the car is traveling at a speed of 66 km per hour?

(a) 4735

(c) 4375

(b) 3751

(d) 3457

21. The ratio of incomes of two persons is 9 : 7 and the ratio of their expenditures is 4 : 3. If each of them manages to save Rs 2000 per month, find their monthly incomes.

(a) 18000,15000

(c) 18000,14000

(b) 14000,16000

(d) 10000,20000

22. Solve the following pair of linear equations by the elimination method $3x + 4y = 10$ and $2x - 2y = 2$

(a) 4,3

(c) 1,5

(b) 3,8

(d) 2,1

23. Two players, Jessy and mark, play a tennis match. It is known that the probability of Jessy winning the match is 0.62. What is the probability of Mark winning the match?

(a) 0.58

(c) 0.38

(b) 0.37

(d) none of these

24. Two dice, one blue and one grey, are thrown at the same time. Write down all the possible outcomes. What is the probability that the sum of the two numbers appearing on the top of the dice is 8?

(a) $\frac{8}{36}$

(c) $\frac{12}{36}$

(b) $\frac{5}{36}$

(d) $\frac{1}{36}$

25. James buys a fish from a shop for his aquarium. The shopkeeper takes out one fish at random from a tank containing 5 male fish and 8 female fish. What is the probability that the fish taken out is a male fish?

(a) $\frac{5}{13}$

(c) $\frac{12}{13}$

(b) $\frac{7}{13}$

(d) $\frac{18}{13}$

26. If the points $A(6, 1)$, $B(8, 2)$, $C(9, 4)$ and $D(p, 3)$ are the vertices of a parallelogram, taken in order, find the value of p .

(a) 7

(c) 1

(b) 8

(d) 6

27. Find the ratio in which the line segment joining the points $(-3, 10)$ and $(6, -8)$ is divided by $(-1, 6)$.

(a) 5:7

(c) 7:2

(b) 3:8

(d) 2:7

28. Find the coordinates of a point A , where AB is the diameter of a circle whose centre is $(2, -3)$ and B is $(1, 4)$.

(a) $(-2, 5)$

(c) $(3, -10)$

(b) $(5, 2)$

(d) $(9, 8)$

29. Find the area of a triangle whose vertices are $(1, -1)$, $(-4, 6)$ and $(-3, -5)$.

(a) 13

(c) 15

(b) 26

(d) 24

30. Find the equation of the straight line through (1,3) and parallel to the straight line $5x-3y+1=0$

(a) $5x-3y-4=0$

(c) $3x-5y+4=0$

(b) $5x+8y-3=0$

(d) $2x-5y+8=0$

31. Find the centroid of the triangle whose vertices are the points (8,4) (1,3) (3,-1)

(a) (4,2)

(c) (3,3)

(b) (5,6)

(d) (4,8)

32. If the two lines are perpendicular with the slopes m_1 and m_2 then $m_1 \times m_2 =$

(a) 0

(c) 1

(b) -1

(d) None

33. Find the coordinates of the orthocenter of the triangle whose vertices are (3,1) (0,4) and (-3,1)

(a) (4,3)

(c) (0,4)

(b) (1,2)

(d) (6,8)

34. Sum of the areas of two squares is 468 m². If the difference of their perimeters is 24 m, find the sides of the two squares.

(a) 17m and 19m

(c) 16m and 15m

(b) 16m and 13m

(d) 18m and 12m

35. Two concentric circles are of radii 5 cm and 3 cm. Find the length of the chord of the larger circle which touches the smaller circle.

(a) 8 cm

(c) 12cm

(b) 13 cm

(d) 18cm

36. If $\sin A = \frac{3}{4}$, then the value of $\tan A$

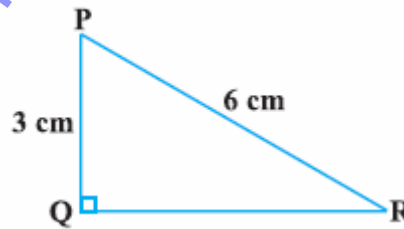
(a) $\frac{10}{\sqrt{7}}$

(c) $\frac{5}{\sqrt{7}}$

(b) $\frac{3}{\sqrt{7}}$

(d) $\frac{4}{\sqrt{7}}$

37. In triangle PQR right-angled at Q, PQ = 3 cm and PR = 6 cm. Determine $\angle QPR$



(a) 60

(c) 20

(b) 45

(d) 90

38. Choose the correct answer for the following

$$\frac{2 \tan 30^\circ}{1 + \tan^2 30^\circ} =$$

(a) $\sin 60$

(c) $\cos 30$

(b) $\tan 30$

(d) $\sin 30$

39. Evaluate the following

$$\sin 60^\circ \cos 30^\circ + \sin 30^\circ \cos 60^\circ$$

(a) $1/2$

(c) 1

(b) 0

(d) $\sqrt{3}/2$

40. $(\sec A + \tan A)(1 - \sin A) =$

(a) $\sec A$

(c) $\sin A$

(b) $\operatorname{Cosec} A$

(d) $\cos A$

41.

$$\frac{1 + \tan^2 A}{1 + \cot^2 A} =$$

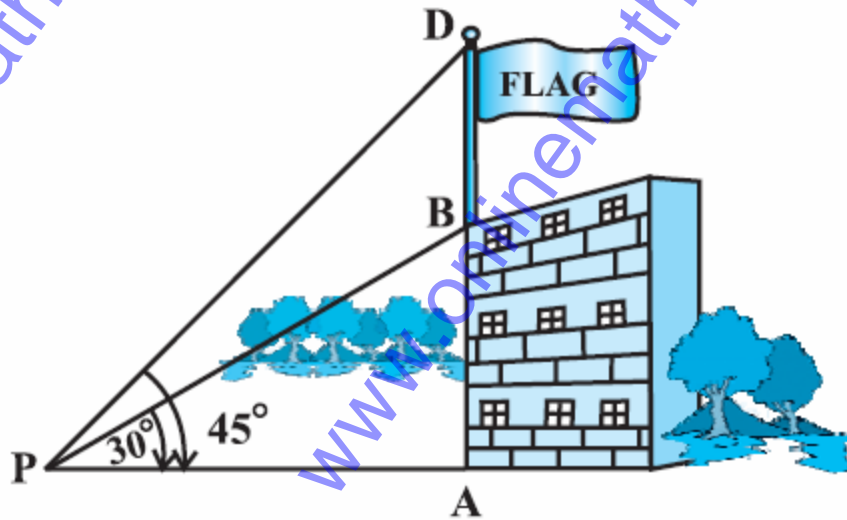
(a) $\sec^2 A$

(c) -1

(b) $\tan^2 A$

(d) $\cot^2 A$

42. From a point P on the ground the angle of elevation of the top of a 10 m tall building is 30° . A flag is hoisted at the top of the building and the angle of elevation of the top of the flagstaff from P is 45° . Find the length of the flagstaff and the distance of the building from the point P. (You may take $\sqrt{3} = 1.732$)



(a) 5.48

(c) 7.32

(b) 2.18

(d) 8.18

43. The angle of elevation of the top of a tower from a point on the ground, which is 30 m away from the foot of the tower, is 30° . Find the height of the tower.

(a) $10\sqrt{3}$

(c) $5\sqrt{3}$

(b) $12\sqrt{3}$

(d) $15\sqrt{3}$

44. The coefficient of variation of a series is 69% and its standard deviation is 15.6. Find the arithmetic mean of the series

(a) 25.9

(c) 22.6

(b) 26.3

(d) 28.9

45. If the two dice are thrown, what is the probability of getting the same number in both the dice.

(a) $1/6$

(c) $8/6$

(b) $2/6$

(d) $9/6$

46. 2 cubes each of volume 64 cm^3 are joined end to end. Find the surface area of the resulting cuboid.

(a) 260

(c) 160

(b) 300

(d) 280

47. A metallic sphere of radius 4.2 cm is melted and recast into the shape of a cylinder of radius 6 cm . Find the height of the cylinder.

(a) 2.74

(c) 5.84

(b) 3.38

(d) 2.82

48. The slant height of a frustum of a cone is 4 cm and the perimeters (circumference) of its circular ends are 18 cm and 6 cm . Find the curved surface area of the frustum.

(a) 66

(c) 48

(b) 52

(d) 24

49. Find the HCF of 96 and 404 by the prime factorisation method. Hence, find their LCM.

(a) 9696

(c) 5236

(b) 6969

(d) 2140

50. The angle in a semi circle is

(a) 30

(c) 60

(b) 90

(d) 0

Answers

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