MATHS

BOOKS - JEEVITH PUBLICATIONS

MATHS (KANNADA ENGLISH)

ANNUAL EXAMINATION QUESTION PAPER JUNE-2019 (WITH ANSWERS)

Mcqs

1. If the n-th term of an arithmetic progression is $5n + 3$, then $3rd$ term of the arithmetic progression is
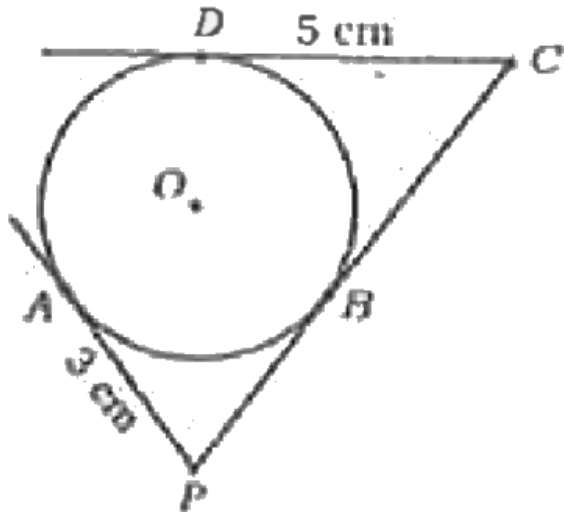
    A. 11

    B. 18

    C. 12

    D. 13

Answer: B

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2. In the following figure, PA, PC and CD are tangents drawn to a circle of centre O, If $AP = 3cm, CD = 5cm$, then the length of PC is.

A. 3 cm

B. 5 cm

C. 8 cm

D. 2 cm

Answer: C

3. If the lines drawn to the linear equations of

the type

$$a_1x + b_1y + c_1 = 0 \text{ and } a_2x + b_2y + c_2 = 0$$

are coincident on each other, then the correct

relation among the following is

A. $\dfrac{a_1}{a_2} = \dfrac{b_1}{b_2} = \dfrac{c_1}{c_2}$

B. $\dfrac{a_1}{a_2} \neq \dfrac{b_1}{b_2} \neq \dfrac{c_1}{c_2}$

C. $\dfrac{a_1}{a_2} = \dfrac{b_1}{b_2} \neq \dfrac{c_1}{c_2}$

D. $\dfrac{a_1}{a_2} \neq \dfrac{b_1}{b_2} = \dfrac{c_1}{c_2}$

Answer: A

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4. The distance between the origin and co-ordinates of point (x, y) is

A. $x^2 + y^2$

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

C. $\sqrt{x^2 + y^2}$

D. $x^2 - y^2$

Answer: C

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5. If the HCF of 72 and 120 is 24, then their LCM

is

A. 36

B. 720

C. 360

D. 72

Answer: C

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6. The value of $\sin 30° + \cos 60°$ is

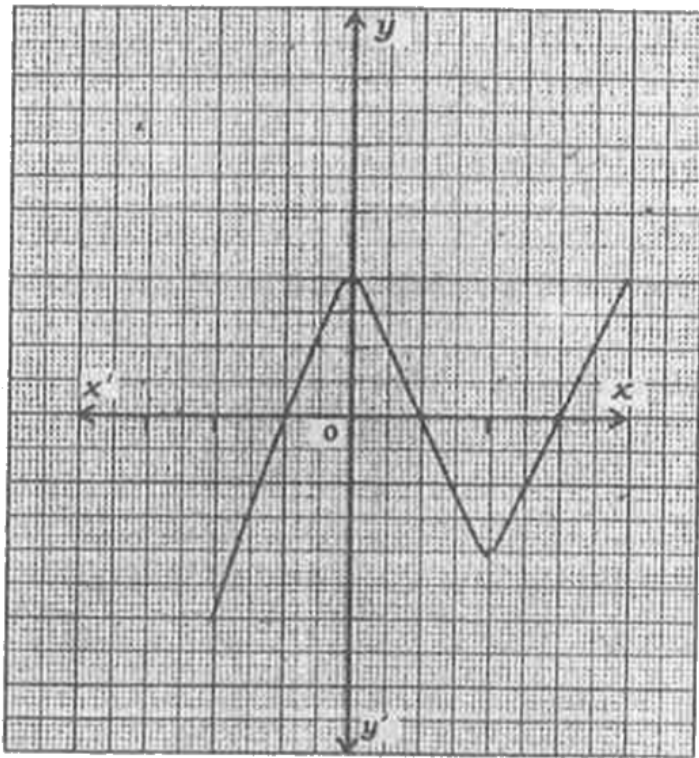A. $\dfrac{1}{2}$

B. $\dfrac{3}{2}$

C. $\dfrac{1}{4}$

D. 1

Answer: D

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7. In the given graph of $y = P(x)$, the number of zero is

A. 4

B. 3

C. 2

D. 7

Answer: B

8. Faces of cubical die numbered from 1 to 6 is rolled once. The probability of getting an odd number on the top face is

A. $\dfrac{3}{6}$

B. $\dfrac{1}{6}$

C. $\dfrac{2}{6}$

D. $\dfrac{4}{6}$

Answer: A

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1. Write the formula to find the sum of first n terms of an Arithmetic progression, whose first term is a and the last term is a_n.

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2. If a pair of linear equations represented by lines has no solutions (inconsistent) then write what kinds of lines are these.

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3. Write the formula to find area of a sector of a circle, if angle at the centre is $'\theta'$ degrees.

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4. Write 96 as the product of prime factors.

5. Find the degree of the polynomial

$$P(x) = x^3 + 2x^2 - 5x - 6$$

6. Ina

$$\Delta ABC, \angle ABC = 90° \text{ and } \angle ACB = 30°$$

then find $AB : AC$.

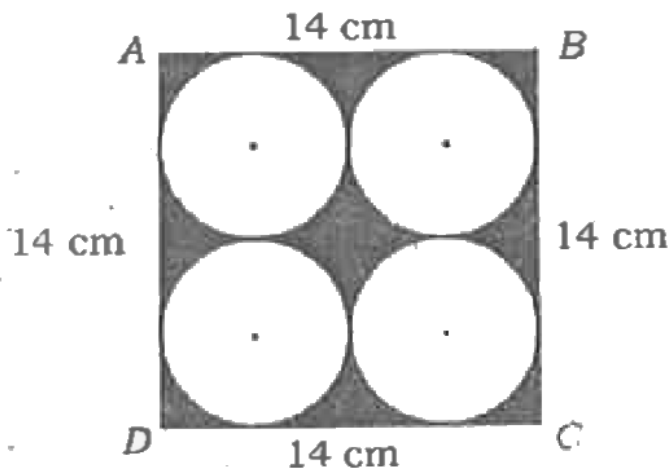**7.** Find the solution for the pair of linear equations:

$$x + y = 14$$

$$x - y = 4$$

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8. ABCD is a square of side 14cm. Four congruent circles are drawn in the square as shown in figure. Calculate the area of the shaded region.

[Circles touch each other externally and also sides of the square]

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9. Find the distance between the points $(2, 3)$ and $(4, 1)$.

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

11. Prove that $5 + \sqrt{3}$ is an irrational number.

12. $\triangle ABC \sim \triangle DEF$ and their areas are $64cm^2$ and $100cm^2$ respectively. If $EF = 12cm$ then find the measure of BC.

13. A verticle pole of height 6m casts a shadow 4m long on the ground, and at the same time a tower on the same ground casts a shadow 28m long. Find the height of the tower.

14. The diagonal BD of parallelogram ABCD intersect AE at F as shown in the figure. If E is any point on BC, then prove that $DF \times EF = FB = FA.$

15. sum and product of the zeroes of a quadratic polynomial $P(x) = ax^2 + bx - 4$ are $\dfrac{1}{4}$ and $- 1$ respectively. Then find the values of a and b.

16. Find the quotient and remainder when

$$p(x) = 2x^2 + 2x + 1 \quad \text{is} \quad \text{divided} \quad \text{by}$$

$$g(x) = x + 2$$

17. Find the value of k, in which one of its zeros

is -4 of the polynomial

$$P(x) = x^2 - x - (2k + 2).$$

18. Solve the equation $x^2 - 3x - 10 = 0$ by using formula.

19. If $\cos ec\theta = \dfrac{13}{12}$ then find the value of $\cos \theta$.

20. $\tan A. \sin A + \cos A = \sec A$

21. Draw a pair of tangents to a circle of radius 5 cm which are inclined to each other at an angle of $60°$.

22. A box contains 90 discs. Which are numbered from 1 to 90. If one disc is drawn at randow from the box. Find the probability that is bears a perfect square number.

23. A metallic sphere of radius 9cm is melted and recast into the shape of a cyclinder of radius 6 cm. Find the height of the cyclinder.

24. The faces of two cubes of volume $125cm^3$ each are joined together to form a cuboid. Find the total surface area of the cuboid.

25. Prove that the "Length of tangents drawn from an external point a circle are equal".

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

27. Construct a triangle with sides 5 cm, 6 cm and 7 cm and then another triangle whose sides are $\dfrac{7}{5}$ of the corresponding sides of the first triangle.

28. Find the mode for the following data in the frequency distribution table:

Family size	1–3	3–5	5–7	7–9	9–11
Number of families	7	8	2	2	1

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29. Find the median for the following data in the frequency distribution table:

| Weight (in kg)	15–20	20–25	25–30	30–35	35–40
Number of students	2	3	6	4	5.

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30. From the of a vertical building of $50\sqrt{3}m$ height on a level ground the angle of depression of an object on the same ground is observed to be $60°$. Find the distance of the object from the foot of the building.

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31. Two windmills of height 50m and $40\sqrt{3}m$ are on either side of the field. A person observes the top of the windmills from a point observes the top of the windmills from a point

in between them. The angle of elevation was found to be $45°$ and $30°$. Find the distance between the windmills.
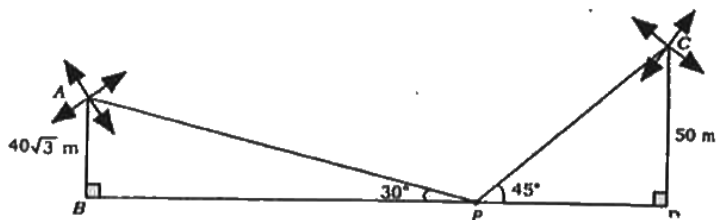
32. The following table gives production yield per hectare of wheat of 100 farms of a village.

| Production yield (in kg/ha)	50–55	55–60	60–65	65–70	70–75	75–80
Number of farms	2	8	12	24	38	16

Change the distribution, and draw its ogive

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33. A cone is having its base radius 12 cm and height 20 cm. If the top of this cone is cut in to form of a small cone of base radius 3cm is remove, then the remaining part of the solid cone becomes a frustum. Calculate the volume

of the frustum.

Height 20cm

Redius 3cm

Redius 12cm

A

B O C
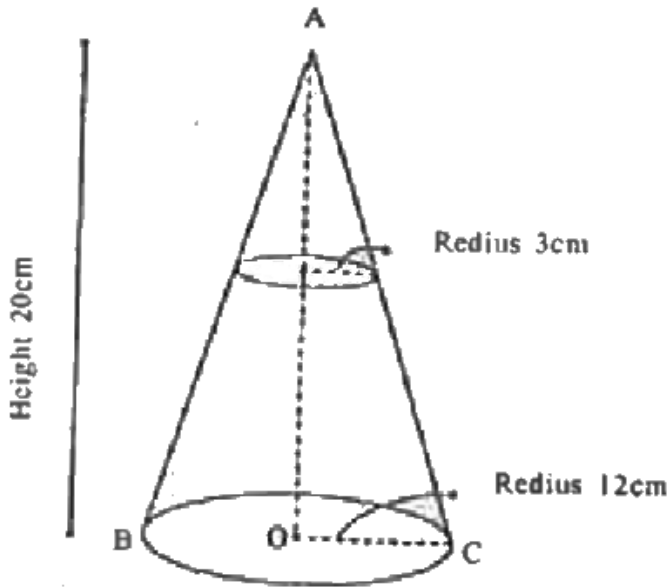
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34. The sum o the fourth and eighth terms of

arithmetic progression is 24 and the sum of

the sixth and tenth terms is 44. Find the first three terms of the Arithmetic progression:

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35. Prove that "In a right triangle, the square of the hypotenuse is equal to the sum of squares of the other two sides".

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36. Solve graphically

$$2x + y = 8$$

$$x - y = 1$$

37. The ages of two students A and B are 19 years and 15 years respectively. Find how many years it will take so that the product of their ages becomes equal to 480.

38. If the quadratic equation

$$(b - c)x_2 + (c - a)x + (a - b) = 0 \quad \text{has}$$

equal roots, then show that $2b = a + c$.