CBSE EXAMINATION PAPER-2026

MATHEMATICS

(Solved)

Time allowed : 3 hours | Maximum Marks : 88

General Instructions :

Read the following instructions carefully and follow them :

i. This question paper contains **44 questions.** All questions are **compulsory.**

ii. This question paper is divided into **5 sections.**

iii. **Section A** – questions number **1 to 3** are case based questions

iv. **Section B** – questions number **4 to 23** are multiple choice questions

v. **Section C** – questions number **24 to 30** are very short answer

vi. **Section D** – questions number **31 to 38** are short answer

vii. **Section E** – questions number **39 to 44** are long answer

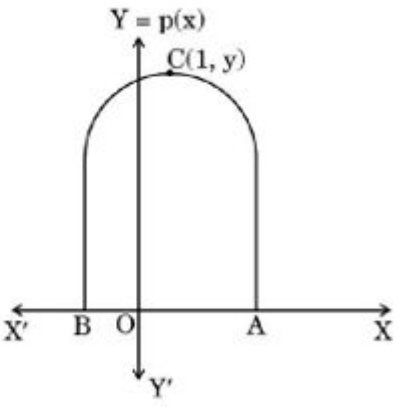
viii. There is no overall choice given in the question paper. However, an internal choice has been provided in few questions.

ix. Use of calculator is NOT allowed.

Section A

Question 1. During a theatre drama, a backdrop of building arches was used. The shape of the curve shown below can be represented by the polynomial $p(x) = — x^2 + 2x + 8$, where x is the length (in feet) on stage level. Based on the figure given above, answer the following questions





(1) Determine the height of the arch.

[1 Marks]

(2) Find the span of the arch on the stage floor.

[1 Marks]

(3)

Find zeroes of the polynomial p(x). Which points on the graph represent the zeroes ?

[1 Marks]

(4) Write the coordinates of the point of intersection of the above curve with the y-axis.

[1 Marks]

Question 2. A group of friends wanted to play cards with two identical packs together. While shuffling the cards, three cards are dropped. Rest of the cards are shuffled and one card is drawn at random. Assuming that the dropped cards were a queen of hearts, a ten of spades and an ace of clubs, answer the following questions :



(1) Find the probability that the drawn card is a face card.

[1 Marks]

(2) Find the probability that the drawn card is either a king or a queen.

[1 Marks]

(3) Find the probability that the drawn card is a jack. Compare it with the probability when none of the cards were dropped. In which case is the probability of getting a jack higher ?

[1 Marks]

(4) .Do you think that the probability of getting a queen was higher if none of the cards were dropped ? Justify your answer.

[1 Marks]

Question 3.

A model of Leafy Ball Fountain is made to be kept on the tabletop. Water gently cascades down the ball into a decorative cylindrical pool where it is recycled.

The diameter of spherical ball is 21 cm.

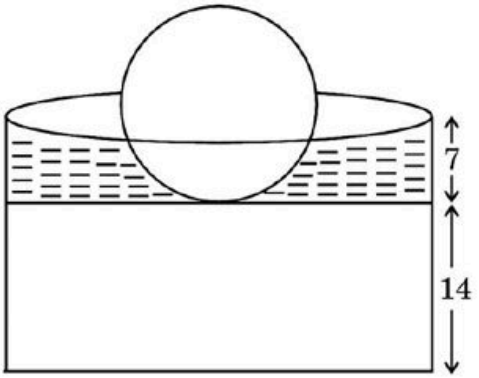
Cylindrical pool — Outer diameter is 50 cm and inner diameter is 40 cm.

Height of solid base is 14 cm.

Height of water filled is 7 cm.

Observe the figure and answer the following questions





(1) Determine the total height of the fountain.

[1 Marks]

(2) Find the volume of the ball.

[1 Marks]

(3) If one-third of the ball is submerged in the water, find the volume of the water filled in the pool.

[1 Marks]

(4)

Find the sum of the outer curved surface area of the cylindrical part and surface area of the ball.

[1 Marks]

Section B

Question 4.

The roots of the quadratic equation $(x — 1)^2 = 16$ are

[1 Marks]

(A) 5,-3

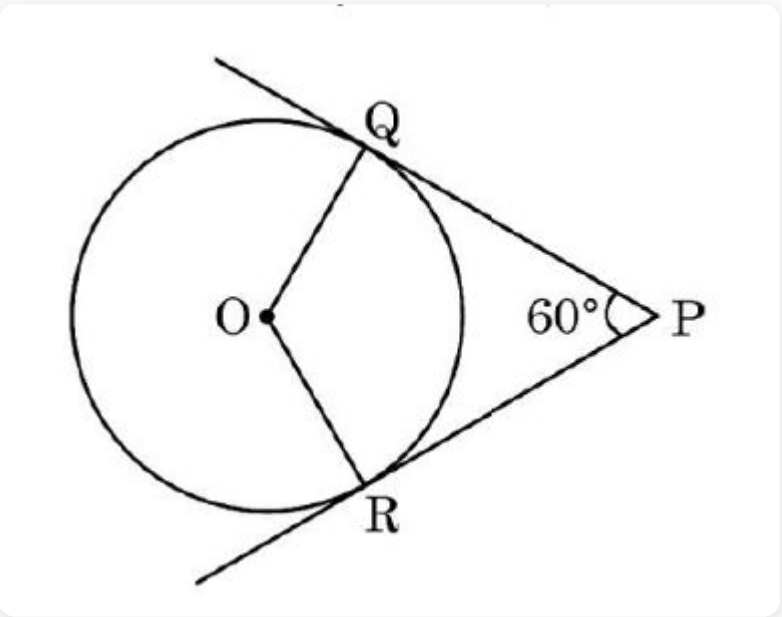
(B) 5,3

(C) 4,-4

(D) -5,3

Question 5. In the given figure, PQ and PR are tangents to a circle with centre O and radius 3 cm. If $\angle QPR = 60°$, then the length of each tangent is :

[1 Marks]



(A) $3\sqrt{3}$ cm

(B) 6cm

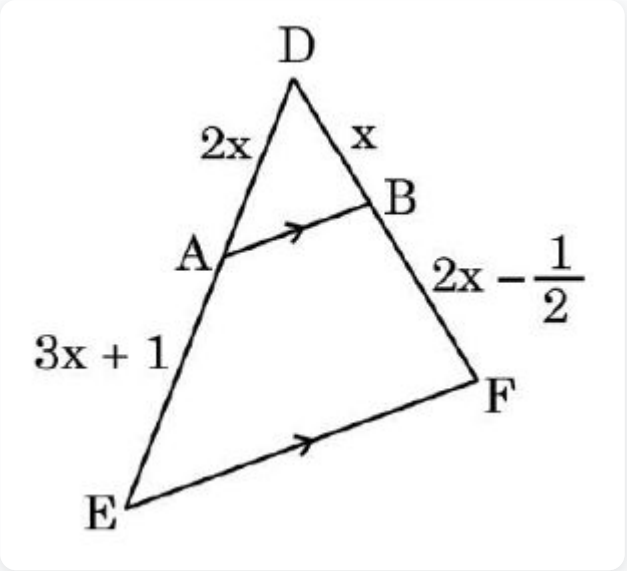
(C) 3 cm

(D) $\sqrt{3}$ cm

Question 6.

In $\triangle DEF$, $AB \parallel EF$. The value of x is :

[1 Marks]



(A) 1

(B) 2 only

(C) −2

(D) 0, 2

Question 7.

(3 ×11 ×13+3) is:

[1 Marks]

(A) a prime number

(B) divisible by 13

(C) an odd number

(D) a composite number

Question 8. Two dice are rolled together. The probability that the sum of the numbers obtained is divisible by 6, is :

[1 Marks]

(A) 1/6

(B) 11/36

(C) 1/4

(D) 1/12

Question 9. The number of multiples of 4 lying between 12 and 250 is :

[1 Marks]

(A) 59

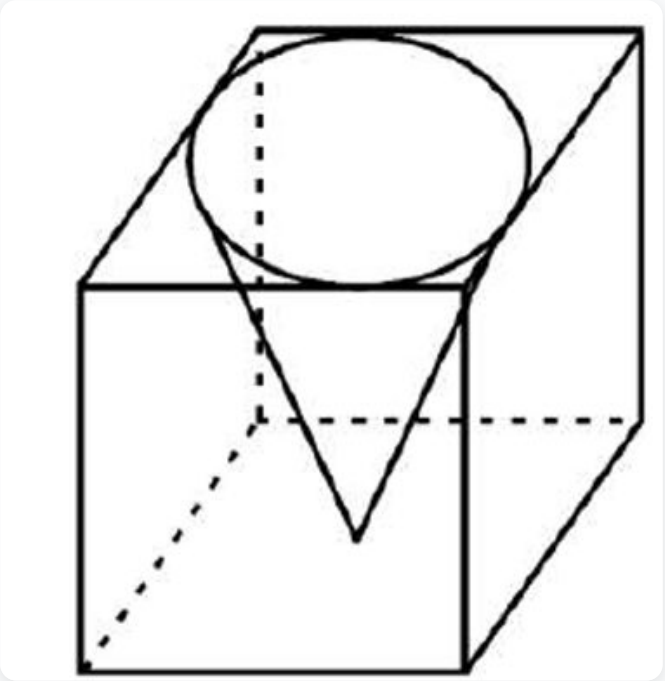
(B) 59.5

(C) 60

(D) 61

Question 10. A cone of maximum size is carved out from a solid cube of edge length /. The volume of the cone is :

[1 Marks]



(A) Π l ³/12

(B) Π l ³/8

(C) Π l ³/3

(D) l ³(1-Π/3)

Question 11.

Equation of another line parallel to the line represented by 2 x−6y=7 is:

[1 Marks]

(A) y=3x−7

(B) x= 7 /2 − 3 y

(C) $x-3y=7$

(D) $2x=9-6y$

Question 12.

If the length of the shadow of a tower is $\sqrt{3}$ times that of its height, then altitude of the Sun is :

[1 Marks]

(A) 60°

(B) 15°

(C) 30°

(D) 45°

Question 13.

If the roots of the quadratic equation $\sqrt{3}x^2 - kx + 2\sqrt{3} = 0$ are real and equal, then the value (s) of k is / are :

[1 Marks]

(A) 4

(B) 0

(C) -5

(D) $\pm\sqrt{24}$

Question 14.

The n^{th} term of the A.P. -1/3,2/3,5/3,8,3,....is

[1 Marks]

(A) $3n-4$

(B) $n-4/3$

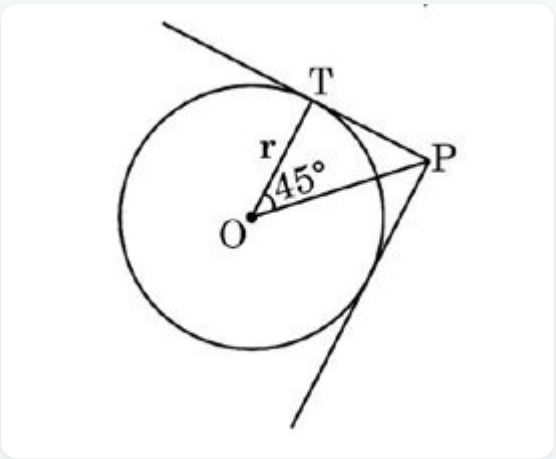
(C) $n-4/3$

(D) $n-2/3$

Question 15.

In the given figure, PT is a tangent to the circle with centre O and radius r . If ∠POT= 45° , then the length of OP is :

[1 Marks]



(A) r√2

(B) 2r

(C) r^2

(D) √2r

Question 16.

It is given that △ABC∼△QRP such that AB=9, BC=5 and PR=2 Length of side QR is :

[1 Marks]

(A) 3.6cm

(B) 5/18cm

(C) 0.9 cm

(D) 10/9 cm

Question 17. The sum and product of zeroes of a quadratic polynomial p(x) are-1/3 and 2 respectively. The polynomial p(x) is :

[1 Marks]

(A) $3x^2-x+6$

(B) $-3x^2-x-6$

(C) $3x^2-x+2$

(D) $x^2+ 1/3 x-2$

Question 18. Given that $\sin 2\alpha = \sqrt{3}/2$ the value of $\sin 3\alpha$ is :

[1 Marks]

(A) 1

(B) $\sqrt{3}/4$

(C) $3\sqrt{3}/4$

(D) 1/2

Question 19.

The median and mode of a distribution are 25.2 and 26.1 respectively. The mean of the distribution is :

[1 Marks]

(A) 24.25

(B) 24.3

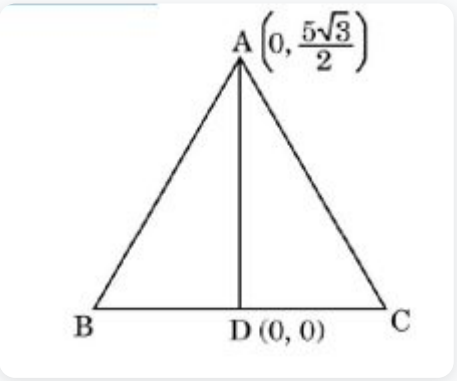
(C) 24.75

(D) 25.5

Question 20.

In the given figure Δ ABC is an equilateral triangle. AD is a median of the triangle joining the points A $(0,5\sqrt{3}/2)$ D(0, 0). Points B and C are (in same order) :

[1 Marks]



(A) $(-5\sqrt{3},0),(5\sqrt{3},0)$

(B) (-5,0),(5,0)

(C) (-5/2,0),(5/2,0)

(D) (-10,0),(10,0)

Question 21.

The value of (1/2 $\tan^2 45° - \cos^2 60°$) is;

[1 Marks]

(A) -1/4

(B) 0

(C) -1/2

(D) 1/4

Question 22.

Assertion (A): Radius is the smallest distance of a tangent from the centre of the circle.

Reason (R): Radius is perpendicular to the tangent.

[1 Marks]

(A) Assertion (A) is true, but Reason (R) is false.

(B) Both Assertion (A) and Reason (R) are true, but Reason (R) is no# the correct explanation of the Assertion (A).

(C) Assertion (A) is false, but Reason (R) is true.

(D) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).

Question 23.

Assertion (A) : tan 2θ is not defined at θ = 45°. Reason (R) : sin 90° ≠ cos 90°.

[1 Marks]

(A) Assertion (A) is false, but Reason (R) is true.

(B) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).

(C) Both Assertion (A) and Reason (R) are true, but Reason (R) is no# the correct explanation of the Assertion (A).

(D) Assertion (A) is true, but Reason (R) is false.

Section C

Question 24.

Find the length of the plank that can be used to measure the lengths 4 m 20 cm and 5 m 4 cm exactly, in the least time.

[2 Marks]

Question 25.

In an AP., the first term is 32 and the last term is — 10. If the common difference is — 2, then find the number of terms and their sum.

[2 Marks]

Question 26.

Find the sum of the first 28 terms of an A.P. whose nth term is given by $a_n = 3n - 2$.

[2 Marks]

Question 27.

Find the coordinates of a point on the line x + y = 5 which is equidistant from (6, 4) and (5, 2).

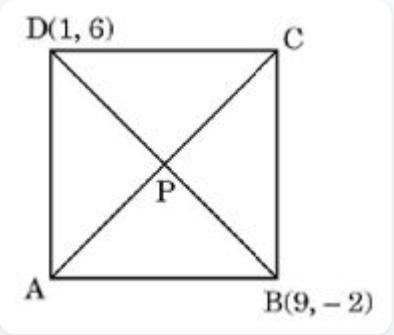
[2 Marks]

Question 28.

Diagonals AC and BD of square ABCD intersect at P. Coordinates of points B and D are (9, — 2) and (1, 6) respectively.
(i) Find the co-ordinates of point P.

(ii) Find the length of the side of the square.

[2 Marks]



Question 29.

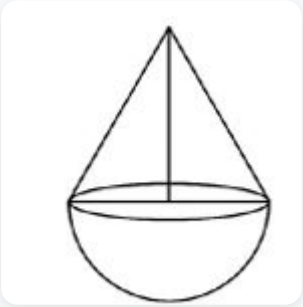
The diagonals of a quadrilateral ABCD intersect each other at the point O such that AO/OC= BO/OD .Show that quadrilateral ABCD is a trapezium.

[2 Marks]

Question 30.

A toy is in the form of a cone mounted on a hemisphere of radius 7 cm. The total height of the toy is 31 cm. Find the total surface area of the toy.

[2 Marks]



Section D

Question 31.

If sin **θ** + cos **θ** = √3, then prove that

tan **θ**+cot **θ**=1

[3 Marks]

Question 32.

Prove that : $(\sin A + \sec A)^2 + (\cos A + \operatorname{cosec} A)^2 = (1 + \sec A \operatorname{cosec} A)^2$

[3 Marks]

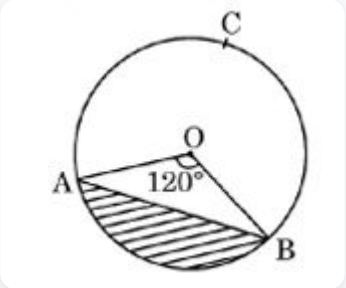
Question 33.

In the given figure, chord AB subtends an angle of 120° at the centre of the circle with radius 7 cm. Find

(i) perimeter of major sector OACB, and

(ii) area of the shaded segment, if area of Δ OAB = 21.2 cm²

[3 Marks]



Question 34.

Prove that√5 is an irrational number.

[3 Marks]

Question 35.

Find two consecutive negative integers, sum of whose squares is 481.

[3 Marks]

Question 36.

A point P(x, 7) divides a line segment joining the points A(- 5, 4) and B(7, 9) in a certain ratio. Find the ratio and hence find the value of x.

[3 Marks]

Question 37.

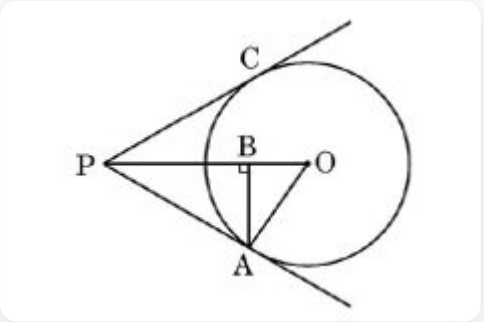
Two tangents PA and PB are drawn to a circle with centre O from an external point P. Prove that ∠ APB =2 ∠ OAB.

[3 Marks]

Question 38.

In the given figure, PA is the tangent to the circle with centre O such that OA = 10 cm, AB = 8cm and AB⊥ OP. Find the length of PB.

[3 Marks]



Section E

Question 39.

The median of the following data is 137. Find the values of x and y, given that total of frequencies is 68.

[5 Marks]

Class	*Frequency*
65 – 85	4
85 – 105	5
105 – 125	x
125 – 145	20
145 – 165	14
165 – 185	y
185 – 205	4

Question 40.

Find mean and mode of the following distribution :

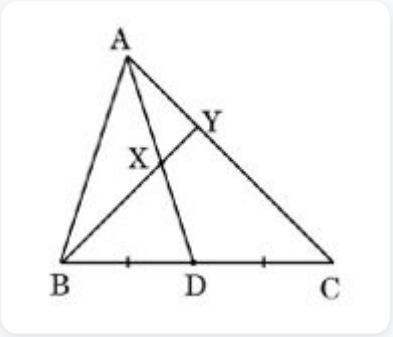
[5 Marks]

Class	*Frequency*
0 – 10	3
10 – 20	6
20 – 30	11
30 – 40	10
40 – 50	13
50 – 60	3
60 – 70	4

Question 41.

In △ABC, AD is a median. X is a point on AD such that AX : XD = 2 : 3. BX is extended so that it intersects AC at Y. Prove that BX=4XY

[5 Marks]



Question 42.

Solve the following system of equations graphically :

x-2y=3, 3x-8y=7

[5 Marks]

Question 43.

Five years ago, Adil was thrice as old as Bharat. Ten years later Adil shall be twice as old as Bharat. To know the present ages of Adil and Bharat :

(i) form the linear equations representing the above information.

(ii) show that the system of equations is consistent with unique solution.

(iii) find the present ages of Adil and Bharat.

[5 Marks]

Question 44.

A boy standing on a horizontal plane is flying a kite with a string of length 60 m, at an angle of elevation of 30°. Another boy standing on the roof of a 20 m high building, finds the angle of elevation of the same kite to be 45°. If both the boys are on opposite sides of the kite, find the distance of the first boy from the base of the building. Also, find the height of the kite from the ground. *(Use* $\sqrt{3}=1.73$*)* .

[5 Marks]