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.

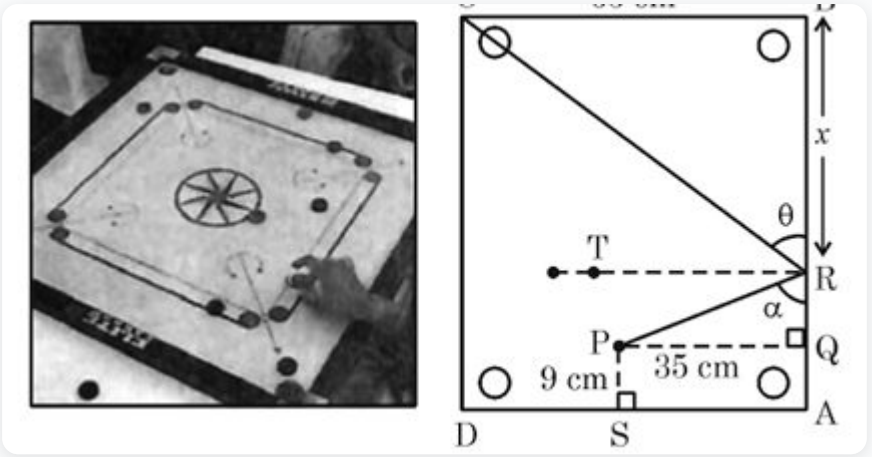
Section A

Question 1.

Carom board is a very popular game. The board is a square of side length 65 cm. It has circular pockets in each corner.

Ansh strikes a disc, kept at position P with a striker. The disc hits the boundary of the board at R and goes straight to pocket at corner C. It is given that P S=9 cm ,PQ=35 cm ,BR=x, $\angle PRQ=\alpha$ and $\angle CRB=\theta$.

Based on the above information, answer the following questions :



(1) Using law of reflection i.e. ∠PRT=∠CRT prove that θ=α

[1 Marks]

(2) Prove that △PQR~△CBR given that PQ. is perpendicular to AB

[1 Marks]

(3)

Find the value of x using similarity of triangles.

[1 Marks]

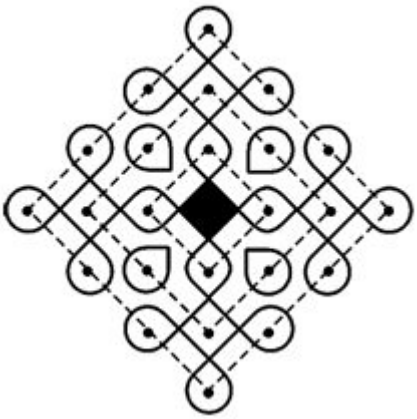
(4) If Area △PQR/ Area △CBR = PQ^2 /CB^2 then find the value of x

[1 Marks]

Question 2.

Kolam' is a decorative art which is made with rice flour in South Indian States. It is drawn on grid pattern of dots. One such art work is shown below. Observe the given figure carefully. There are 4 dots in first square, 8 dots in second square, 12 dots in third square and so on.

Based on the above, answer the following questions :



(1) Show that number of dots given above form an A.P. Write the first term and common difference

[1 Marks]

(2)

Write n^{th} term of the A.P. formed.

[1 Marks]

(3) The pattern is expanded on a large ground. If total 220 dots are used, find the number of squares formed

[1 Marks]

(4) Is it possible to complete n number of squares using 100 dots ? If yes, then find the value of n.

[1 Marks]

Question 3.

Observe the map of Jaipur city placed on a Cartesian plane. Taking Rambagh Palace as origin, the location of some places are given below :

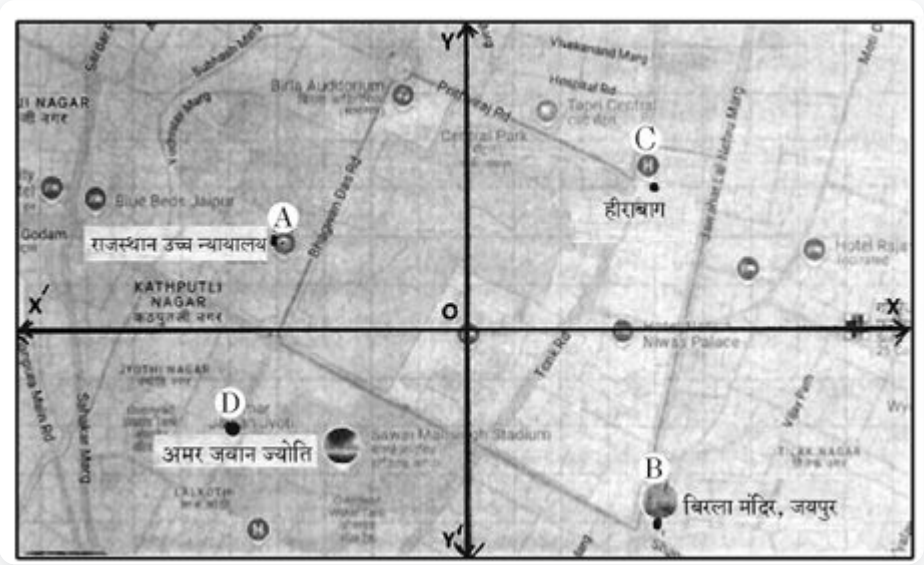
Point A : (-4, 2) Rajasthan High Court

Point B : (4, —4) Birla Mandir

Point C : (4, 3) Heera Bagh

Point D : (-5, —2) Amar Jawan Jyoti

Based on the above, answer the following questions :



(1) There is a crossing on X-axis which divides AD in a certain ratio. Find the ratio.

[1 Marks]

(2) Advocate Rehana stays at Heera Bagh. How much distance she has to cover daily to go to the court and coming back home ?

[1 Marks]

(3) Is Birla Mandir equidistant from Heera Bagh and Amar Jawan Jyoti ? Justify your answer.

[1 Marks]

(4) Using section formula, show that points A, O and B are not collinear.

[1 Marks]

Section B

Question 4.

If the quadratic equation $9x^2 + 8kx + 16 = 0$ has real and equal roots, then the value of k is

[1 Marks]

(A) -3

(B) 3

(C) 3/2

(D) -4

Question 5.

It is given that $\triangle ABC \sim \triangle EDF$. Which of the following is not true ?

[1 Marks]

(A) Perimeter of $\triangle ABC$/ Perimeter of $\triangle EDF$ =AB/ED

(B) $\angle A = \angle D, \angle C = \angle F$

(C) AB/ED=AC/EF

(D) AB+BC/AC=DE+DF/EF

Question 6.

The n^{th} term of an A.P. is $\sqrt{2n+1}$ its common difference is

[1 Marks]

(A) 1

(B) $\sqrt{2}$

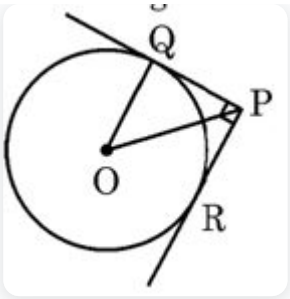
(C) $\sqrt{2}+1$

(D) $\sqrt{2n}$

Question 7.

If PQ and PR are tangents to the circle with centre O and radius 4 cm such that $\angle QPR = 90°$ then the length OP is

[1 Marks]



(A) 8cm

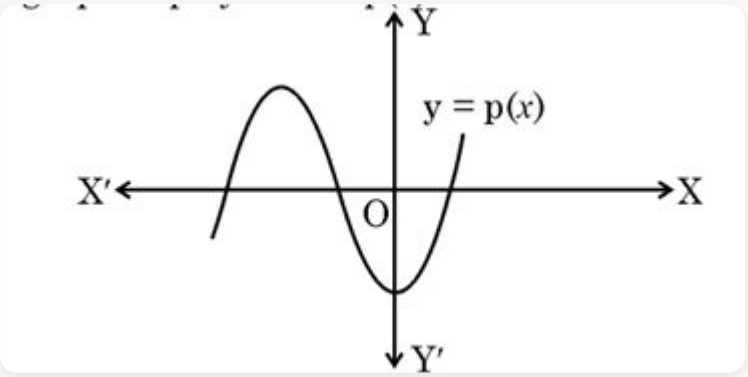
(B) 2 √2cm

(C) 4 √2cm

(D) 4 cm

Question 8. Observe the graph of polynomial p(x). Number of zeroes of p(x) is

[1 Marks]



(A) 5

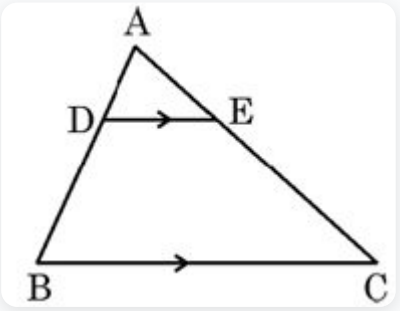
(B) 6

(C) 4

(D) 3

Question 9. In the given figure, DE || BC. if AD/DB =1/3 and AC = 6 cm, then length AE is

[1 Marks]



(A) 1.5cm

(B) 2cm

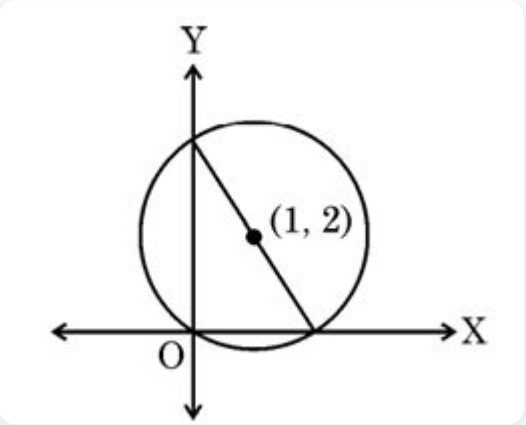
(C) 3cm

(D) 1cm

Question 10.

In the given figure, a circle is centred at (1, 2). The diameter of the circle is

[1 Marks]



(A) √5

(B) 2√5

(C) 2√2

(D) 4

Question 11.

The value of k for which the system of linear equations x/2+ y/3=5 and 2x + ky = 7 is inconsistent, is

[1 Marks]

(A) 4/3

(B) 3/4

(C) 3

(D) 1/3

Question 12.

A circle is divided into 16 identical sectors. If radius of the circle is 7 cm, area of each sector is

[1 Marks]

(A) 77/4 cm^2

(B) 77 cm^2

(C) 154 cm^2

(D) 77/8 cm^2

Question 13.

Two different dice are rolled together. The probability that both the obtained numbers are less than 4, is

[1 Marks]

(A) 1/4

(B) 2/3

(C) 7/36

(D) 2/9

Question 14.

When sin A=1/3 ,the value of cot A is.

[1 Marks]

(A) 2√2/3

(B) 2√2

(C) 1/2√2

(D) 3

Question 15. $1+\tan^2 A/1+\cot^2 A$ equal to:

[1 Marks]

(A) $\cot^2 A$

(B) $\tan^2 A$

(C) - $\tan^2 A$

(D) -1

Question 16. Three tennis balls are just packed in a cylindrical jar. If radius of each ball is r, volume of air inside the jar is

[1 Marks]



(A) $2\Pi r^3$

(B) $4\Pi r^3$

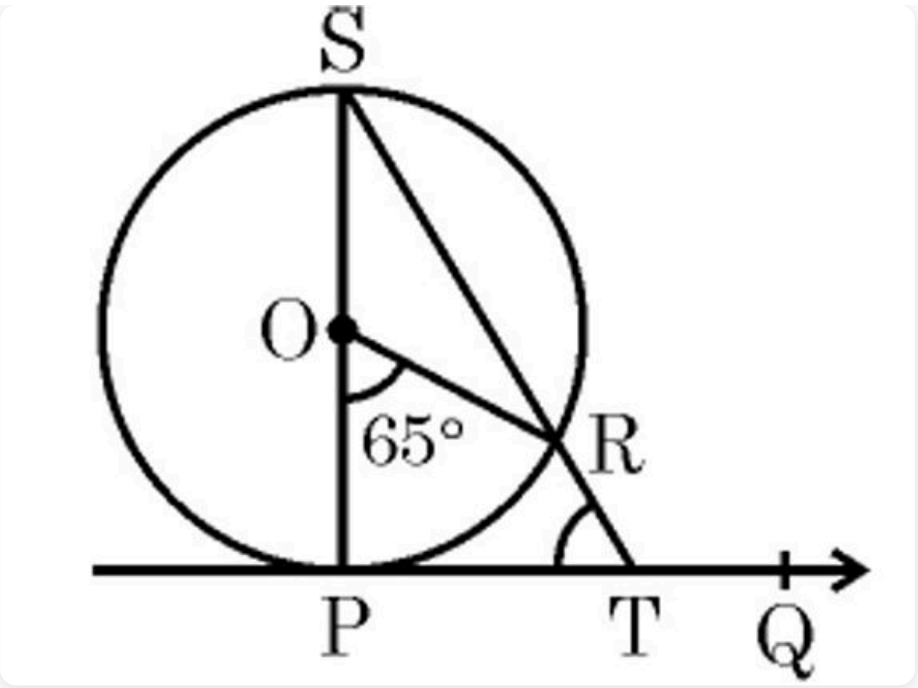
(C) $3\Pi r^3$

(D) $5\Pi r^3$

Question 17.

PQ is tangent to a circle with centre O. If $\angle$ POR = 65°, then m $\angle$ PTR is

[1 Marks]



(A) 65°

(B) 45°

(C) 57.5°

(D) 58.5°

Question 18. The distance between the points (a cos θ+ b sin θ, 0) and (0, a sin θ —b cos θ) is

[1 Marks]

(A) $\sqrt{a^2-b^2}$

(B) $\sqrt{a^2+b^2}$

(C) $a^2- b^2$

(D) a^2+b^2

Question 19.

An ice-cream cone of radius r and height h is completely filled by two spherical scoopes of ice-cream. If radius of each spherical scoop is r/2 then h:2r equals

[1 Marks]

(A) 2:1

(B) 1:8

(C) 1:2

(D) 1:1

Question 20.

Arc PQ subtends an angle θ at the centre of the circle with radius 6.3 cm. If PQ arc=11 cm, then the value of θ is

[1 Marks]

(A) 60°

(B) 100°

(C) 10°

(D) 45°

Question 21.

Mean and Median of a frequency distribution are 43 and 40 respectively. The value of mode is

[1 Marks]

(A) 38.5

(B) 34

(C) 43

(D) 41.5

Question 22.

Assertion (A) : If probability of happening of an event is 0.2p, p > 0, then p can't be more than 5.

Reason (R) : $P(\bar{E})=1-P(E)$ for an event E.

[1 Marks]

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

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

(C) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).

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

Question 23.

Assertion (A) (√3+√5) is an irrational number.

Reason (R) : Sum of the any two irrational numbers is always irrational

[1 Marks]

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

(B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).

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

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

Section C

Question 24.

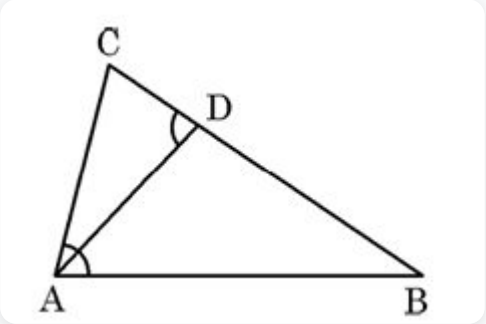
Verify that roots of the quadratic equation $(p — q)x^2 + (q—r)x + (r—p) = 0$ are equal when $q + r = 2p$.

[2 Marks]

Question 25.

D is a point on the side BC of **Δ** ABC such that ∠CAB = ∠CDA. Show tha $CA^2 = CB \times CD$.

[2 Marks]



Question 26.

Prove that $2 + 3\sqrt{5}$ is an irrational number given that √5 is irrational number.

[2 Marks]

Question 27.

If the HCF of 210 and 55 is expressed as 210 x 5 + 55m, then find the value of m.

[2 Marks]

Question 28.

Prove that:√ **1+sin A/ 1- sin A** =sec A+ tan A

[2 Marks]

Question 29.

Evaluate : $3\cos^2 30° - 6\text{cosec}^2 30°/\tan^2 60°$

[2 Marks]

Question 30.

α and βare the zeroes of the polynomial $5x^2$— 16x — 10. Find the value of α/β + β/α

[2 Marks]

Section D

Question 31.

In a class test, Veer scored 6 more than twice as many marks as Kevin scored. If one of them had scored 4 more marks, their total score would have been 40. Find the marks obtained by Veer and Kevin.

[3 Marks]

Question 32.

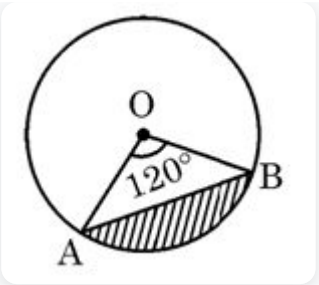
Solve the linear equations 3x +y = 14 and y = 2 graphically.

[3 Marks]

Question 33.

Chord AB of a circle with centre O and radius 21 mm subtends an angle of 120° at the centre. Find the perimeters of the shaded region. (Use√ 3 = 1.73)

[3 Marks]



Question 34.

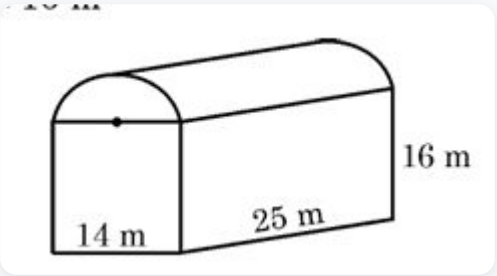
Prove that : sinθ - cosθ +1/ sinθ +cos θ- 1= 1/ secθ -tan θ

[3 Marks]

Question 35.

To protect plants from heat, a shed of iron rods covered with green cloth is made. The lower part of the shed is a cuboid mounted by semi-cylinder as shown in the figure. Find the area of the cloth required to make this shed, if dimensions of the cuboid are 14m x 25m x 16 m

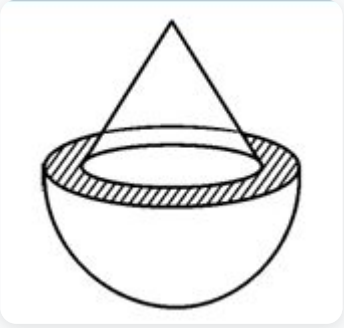
[3 Marks]



Question 36.

The internal and external radii of a hollow hemisphere are 5√2 cm and 10 cm respectively. A cone of height 5√7 cm and radius 5√2 cm is surmounted on the hemisphere as shown in the figure. Find the total surface area of the object in terms of Π. (Use √2 = 1.4)

[3 Marks]



Question 37.

A bag contains 30 balls out of which ‘m’ number of balls are blue in colour.

(i) Find the probability that a ball drawn at random from the bag is not blue.

(ii) If 6 more blue balls are added in the bag, then the probability of drawing a blue ball will be 5/4 times the probability of drawing a blue ball in the first case. Find the value of m.

[3 Marks]

Question 38.

Find the greatest number less than 10,000 which is exactly divisible by 48, 60 and 65.

[3 Marks]

Section E

Question 39.

A person on tour has ₹ 5,400 for his expenses. If he extends his tour by 5 days, he has to cut down his daily expenses by ₹ 180. Find the original duration of the tour and daily expense.

[5 Marks]

Question 40.

The total cost of certain piece of cloth was ₹ 2,100. During special sale time, the shopkeeper offered 2 m extra cloth for free thus reducing the price of cloth per metre by ₹ 120. What was the original per metre price of cloth and its length?

[5 Marks]

Question 41.

In the given figure, TP and TQ are tangents to a circle with centre M, touching another circle with centre N at A and B respectively. It is given that MQ = 13 cm, NB = 8 cm, BQ = 35 cm and TP = 80 cm.

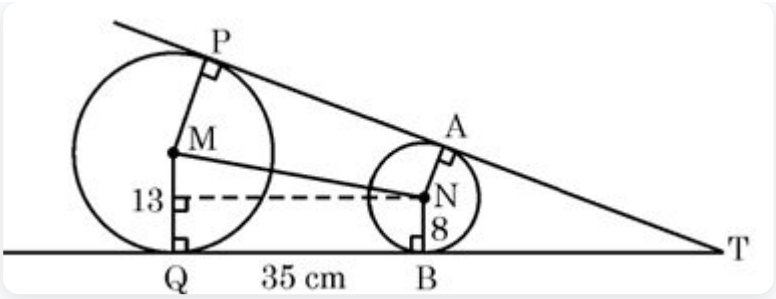
i) Name the quadrilateral MQBN.

(ii) Is MN parallel to PA? Justify your answer.

(iii) Find the length TB.

(iv) Find MN.

[5 Marks]



Question 42.

A kite is flying at a height of 60 m above the ground level. Ravi, standing at the roof of the house is holding the string straight and observes the angle of elevation of kite as 30°. From the bottom of the same building, the angle of elevation of kite is 45°. Find the length of the string and height of roof from the ground. (Use √ 3 = 1.73)

[5 Marks]

Question 43.

The median of the following data is 50 and sum of all frequencies is 90 :

Find the values of p and q.

[5 Marks]

Class :	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80	80 – 90
Frequency :	p	15	25	20	q	8	10

Question 44.

Find mean and mode of the following distribution :

[5 Marks]

Class :	0 – 15	15 – 30	30 – 45	45 – 60	60 – 75	75 – 90	90 – 105
Frequency :	4	8	11	14	10	7	6