10

mtG

# CBSE

## BOARD EXAM 2024-25

ScoreMore

# 15 SAMPLE PAPERS

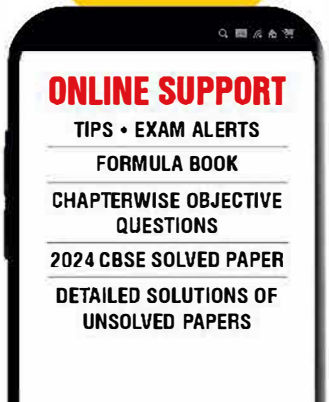
**BASED ON LATEST PATTERN, SYLLABUS AND SAMPLE PAPER RELEASED BY CBSE ON 5TH SEPTEMBER 2024**

Latest

- **50% Competency Focused** Questions (MCQs, Case / Source Based, etc.)
- **20% Select Response** Type Questions (MCQs)
- **30% Constructed Response** Type Questions (Short Answer / Long Answer)

- ➡ Latest CBSE Sample Question Paper 2024-25
- ➡ 15 Sample Question Papers (SQPs) with BLUEPRINT as design issued by CBSE
- ➡ Self Evaluation Sheet included to check your readiness

Chapterwise **COMPETENCY FOCUSED QUESTIONS** Included




# MATHEMATICS

## BASIC

# Sample Question Paper

SQP
10

## BLUEPRINT

**Time Allowed :** 3 hours **Maximum Marks :** 80

| S. No. | Unit/Chapter | | MCQs (1 mark) | VSA (2 marks) | SA (3 marks) | LA (5 marks) | Case Based (4 marks) | Total |
|---|---|---|---|---|---|---|---|---|
| I. | **Number Systems** | | | | | | | |
| | 1. | Real Numbers | 1(1) | – | – | 1(5) | – | **2(6)** |
| II. | **Algebra** | | | | | | | |
| | 2. | Polynomials | 1(1) | – | 1(3) | – | – | **8(20)** |
| | 3. | Pair of Linear Equations in Two Variables | – | 1(2) | – | – | – | |
| | 4. | Quadratic Equations | 1(1) | – | 1(3)* | – | 1(4)* | |
| | 5. | Arithmetic Progressions | 1(1) | – | – | 1(5)* | – | |
| III. | **Coordinate Geometry** | | | | | | | |
| | 6. | Coordinate Geometry | 1(1) | 1(2)* | 1(3) | – | – | **3(6)** |
| IV. | **Geometry** | | | | | | | |
| | 7. | Triangles | 3(3) | 1(2) | 1(3) | – | 1(4)* | **9(15)** |
| | 8. | Circles | 3(3) | – | – | – | – | |
| V. | **Trigonometry** | | | | | | | |
| | 9. | Introduction to Trigonometry | 4(4) | 1(2)* | 1(3)* | – | – | **7(12)** |
| | 10. | Some Applications of Trigonometry | – | – | 1(3) | – | – | |
| VI. | **Mensuration** | | | | | | | |
| | 11. | Areas Related to Circles | 1(1) | – | – | 1(5)* | – | **5(10)** |
| | 12. | Surface Areas and Volumes | 2(2) | 1(2) | – | – | – | |
| VII. | **Statistics and Probability** | | | | | | | |
| | 13. | Statistics | 1(1) | – | – | 1(5) | – | **4(11)** |
| | 14. | Probability | 1(1) | – | – | – | 1(4)* | |
| | **Total** | | **20(20)** | **5(10)** | **6(18)** | **4(20)** | **3(12)** | **38(80)** |

*It is a choice based question.

Subject Code : **241**

**SQP-10**

# Mathematics - Basic

***Time Allowed : 3 Hours*** ***Maximum Marks : 80***

## *General Instructions :*

Read the following instructions carefully and follow them:

1. *This question paper contains 38 questions.*
2. *This Question Paper is divided into 5 Sections A, B, C, D and E.*
3. *In Section A, Questions no. 1-18 are multiple choice questions (MCQs) and questions no. 19 and 20 are Assertion- Reason based questions of 1 mark each.*
4. *In Section B, Questions no. 21-25 are very short answer (VSA) type questions, carrying 02 marks each.*
5. *In Section C, Questions no. 26-31 are short answer (SA) type questions, carrying 03 marks each.*
6. *In Section D, Questions no. 32-35 are long answer (LA) type questions, carrying 05 marks each.*
7. *In Section E, Questions no. 36-38 are case study based questions carrying 4 marks each with sub parts of the values of 1, 1 and 2 marks each respectively.*
8. *All Questions are compulsory. However, an internal choice in 2 Questions of section B, 2 Questions of section C and 2 Questions of section D has been provided. And internal choice has been provided in all the 2 marks questions of Section E.*
9. *Draw neat and clean figures wherever required.*
10. *Take π =22/7 wherever required if not stated.*
11. *Use of calculators is not allowed.*

## SECTION A

**Section A consists of 20 questions of 1 mark each.**

**1.** How many maximum number of tangents can be constructed to a circle from a point lying outside the circle?

(a) 1 (b) 3 (c) 2 (d) None of these

**2.** In the given figure, $\Delta ABC \sim \Delta PQR$, then the value of $PR$ is


(a) 4 (b) 6
(c) 3 (d) 8

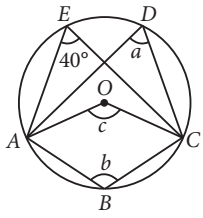
**3.** Find the discriminant of the quadratic equation $3\sqrt{3}x^2 + 10x + \sqrt{3} = 0$.

(a) 8 (b) 136
(c) 36 (d) 64

**4.** Find the coordinates of midpoint of the line segment joining the points $A(2, 2)$ and $B(-4, -4)$.

(a) (1, 1) (b) (–1, 1)
(c) (–1, –1) (d) (1, –1)

**5.** In the given figure, $O$ is the center of circle, $\angle AEC = 40°$, then the value of $a + b + c =$




(a) 280° (b) 200°
(c) 160° (d) 260°

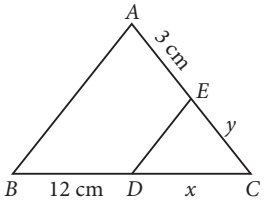
**6.** If $4\tan\beta = 3$, then $\dfrac{4\sin\beta - 3\cos\beta}{4\sin\beta + 3\cos\beta} =$

(a) 0 (b) $\dfrac{1}{3}$ (c) $\dfrac{2}{3}$ (d) $\dfrac{3}{4}$

**7.** The H.C.F. of 121 and 1001 is

(a) 121 (b) 7 (c) 13 (d) 11

**8.** In figure, $DE \parallel AB$. If $AE = 3$ cm and $BD = 12$ cm, then find $x : y$.




(a) 3 : 1 (b) 1 : 3 (c) 4 : 1 (d) 1 : 4

**9.** If $\alpha, \beta$ are the zeroes of the polynomial $p(x) = 4x^2 - 3x - 7$, then $\left(\dfrac{1}{\alpha} + \dfrac{1}{\beta}\right)$ is equal to

(a) $\dfrac{7}{3}$ (b) $\dfrac{-7}{3}$ (c) $\dfrac{3}{7}$ (d) $\dfrac{-3}{7}$

**10.** A tangent $PQ$ at a point $P$ of a circle of radius 7 cm meets a line through centre $O$ at a point $Q$ so that $OQ = 25$ cm. Length $PQ$ is

(a) 20 cm (b) 14 cm (c) 24 cm (d) 26 cm

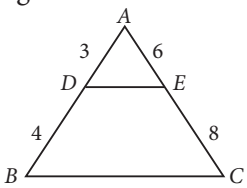
**11.** If $a = \cos A + \sin A$ and $b = \cos A - \sin A$, then $\sqrt{\dfrac{a}{b}} + \sqrt{\dfrac{b}{a}} =$

(a) $2\cos A$ (b) $\dfrac{2}{\sqrt{1+\sec^2 A}}$ (c) $\dfrac{2}{\sqrt{1-\tan^2 A}}$ (d) $2\sqrt{1-\tan^2 A}$

**12.** If areas of two concentric circles are 1386 $cm^2$ and 962.5 $cm^2$, then area of ring so formed is

(a) 433.5 $cm^2$ (b) 423.5 $cm^2$ (c) 422.5 $cm^2$ (d) 420.3 $cm^2$

**13.** For the given triangle, which of the following is true?




(a) $DE = BC$ (b) $DE \parallel BC$ (c) $DE = 1/2\ BC$ (d) None of these

**14.** A solid is hemispherical at the bottom and conical (of same radius) above it. If the surface areas of the two parts are equal, then the ratio of its radius and the slant height of the conical part is

(a) 2 : 1 (b) 1 : 2 (c) 1 : 4 (d) 4 : 1

**15.** If $\sec\theta + \tan\theta = 11$, then the value of $\sec\theta$ is

(a) $\frac{120}{11}$ (b) $\frac{61}{60}$ (c) $\frac{61}{11}$ (d) $\frac{11}{60}$

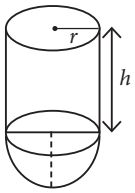
**16.** If $\sum f_i = 11$, $\sum f_i x_i = 2p + 52$ and the mean of distribution is 6, then find the value of $p$.

(a) 8 (b) 18 (c) 7 (d) 9

**17.** If $\sin\theta = \cos\theta$, then the value of $\theta$ is

(a) 90° (b) 45° (c) 60° (d) 30°

**18.** The total surface area of solid opened at the top in the given figure is




(a) $2\pi r(h + r)$ (b) $2\pi rl$ (c) $2\pi(h + l)$ (d) $2\pi r(h - r)$

**DIRECTION :** In question number 19 and 20, a statement of **Assertion (A)** is followed by a statement of **Reason (R)**. Choose the correct option.

(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of 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 true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

**19. Assertion (A) :** If $P(E) = 0.45$, then $P(\overline{E}) = 0.55$.
**Reason (R) :** $P(\overline{E}) = 1 - P(E)$.

**20. Assertion (A) :** If $a_7 - a_{11} = 300$, then $d = -75$.
**Reason (R) :** $n^{\text{th}}$ term of an A.P. $= a + (n - 1)d$, where $a$, $d$ and $n$ are first term, common difference and number of terms respectively.

## SECTION B

**Section B consists of 5 questions of 2 marks each.**

**21.** Solve the pair of linear equations using elimination method $7x - 5y = 11$, $3x + 4y = 17$.

**22.** $ABCD$ is a trapezium such that $BC \parallel AD$ and $AB = 4$ cm. If the diagonals $AC$ and $BD$ intersect at $O$ such that $\frac{AO}{CO} = \frac{OB}{OD} = \frac{1}{2}$, then find the value of $CD$.

**23.** A solid right circular cone of diameter 14 cm and height 8 cm. Find the curved surface area of cone.

**24.** (a) If the points $A(4, 3)$ and $B(x, 5)$ are on the circle with centre $O(2, 3)$, then find the value of $x$.

**OR**

**24.** (b) Find the coordinate of the point which divides the line segment joining the points $(-4, 6)$ and $(3, -8)$ in the ratio 3 : 2 internally.

**25.** (a) If $\sin\theta = a/b$, then find the values of $\tan\theta$ and $\sec\theta$.

**OR**

**25.** (b) For what value of $A$, $\frac{\cos A + \sin A}{\cos A - \sin A} = \frac{\sqrt{3}+1}{\sqrt{3}-1}$.

# SECTION C

**Section C consists of 6 questions of 3 marks each.**

**26.** If the point on $x$-axis which is equidistant from the points $(2, -5)$ and $(-2, 9)$ is $(p, q)$, then find the distance of the point $(p, q)$ from origin.

**27.** In a trapezium $ABCD$, $O$ is the point of intersection of $AC$ and $BD$, $AB \parallel CD$ and $AB = 2CD$. If the area of $\Delta AOB = 84\ cm^2$, find the area of $\Delta COD$.

**28.** (a) Find acute angle $A$ and $B$, if $\sin(A + 2B) = \frac{\sqrt{3}}{2}$ and $\cos(A + 4B) = 0$, $A > B$.

**OR**

**28.** (b) Prove the following identity : $\frac{1}{\text{cosec}\,\theta - \cot\theta} - \frac{1}{\sin\theta} = \frac{1}{\sin\theta} - \frac{1}{\text{cosec}\,\theta + \cot\theta}$

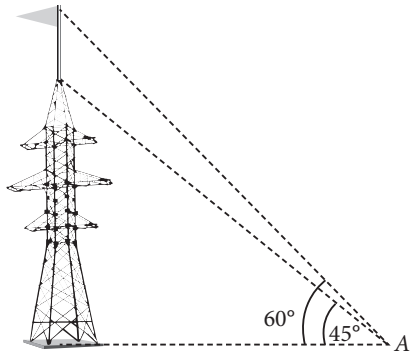
**29.** If product of the zeroes of the polynomial $kx^2 + 41x + 42$ is 7, then find the zeroes of the polynomial $(k - 4)x^2 + (k + 1)x + 5$.

**30.** (a) Seven years ago, Varun's age was five times the square of Swati's age. Three years hence, Swati's age will be two fifth of Varun's age. Find their present ages.

**OR**

**30.** (b) Solve for $x$ : $\frac{x+4}{x-4} + \frac{x-4}{x+4} = \frac{10}{3}$

**31.** A pole 5 m high is fixed on the top of a tower. The angle of elevation of the top of the pole observed from a point $A$ on the ground is 60 degree and the angle of depression of point $A$ from the top of the tower is 45°. Find the height of the tower. (Take $\sqrt{3} = 1.732$)




# SECTION D

**Section D consists of 4 questions of 5 marks each.**

**32.** $A$, $B$ and $C$ start cycling around a circular path in the same direction and at the same time. Circumference of the path is 1980 m. If the speed of $A$ is 330 m/min, speed of $B$ is 198 m/min and $C$ is 220 m/min and they start from the same point, then after how much time will they meet again?

**33.** (a) Which term of the Arithmetic Progression $-7, -12, -17, -22, \ldots$ will be $-82$ ? Is $-100$ any term of the A.P. ? Give reason for your answer.

**OR**

**33.** (b) The sum of three numbers in A.P. is 12 and sum of their cubes is 288. Find the numbers.

**34.** (a) Two circles touch externally. The sum of their areas is $130\pi$ sq. cm and the distance between their centres is 14 cm. Find the radii of the circles.

**OR**

**34.** (b) A path of 5 m width runs round a semi-circular grassy plot whose circumference is $163\frac{3}{7}$ m. Find

(i) the area of the path

(ii) the cost of gravelling the path at the rate of ₹ 12 per sq. m.

(iii) the cost of turfing the plot at the rate of 45 paise per $m^2$.

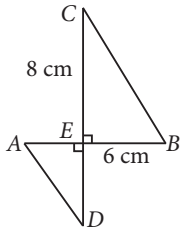
**35.** Calculate the mode for the following frequency distribution.

| **Class interval** | 1-4 | 5-8 | 9-12 | 13-16 | 17-20 | 21-24 | 25-28 | 29-32 | 33-36 | 37-40 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Frequency** | 2 | 5 | 8 | 9 | 12 | 14 | 14 | 15 | 11 | 10 |

# SECTION E

**Section E consists of 3 case study based questions of 4 marks each.**

**36.** Manju was making wind charm with old Cd's and some pieces of cardboard. She cut some cardboard pieces as shown below. The ratio of perimeter of $\Delta ADE$ and $\Delta BCE$ is 1 : 2.




Based on the above information, answer the following questions.

**(i)** If the two triangles here are similar by SAS similarity rule, then what is their corresponding proportional sides?

**(ii)** Find the length of *BC*.

**(iii)** (a) Find the length of *AD*.

**OR**

(b) Find the length of *ED*.

**37.** Computer-based learning (CBL) refers to any teaching methodology that makes use of computers for information transmission. At an elementary school level, computer applications can be used to display multimedia lesson plans. A survey was done on 1000 elementary and secondary schools of Assam and they were classified by the number of computers they had. If one school is chosen at random.

| **Number of Computers** | 0-10 | 11-20 | 21-50 | 51-100 | 101 and more |
|---|---|---|---|---|---|
| **Number of Schools** | 250 | 200 | 290 | 180 | 80 |

Based on the above information, answer the following questions.

**(i)** Find the probability that the school chosen at random has more than 100 computers.

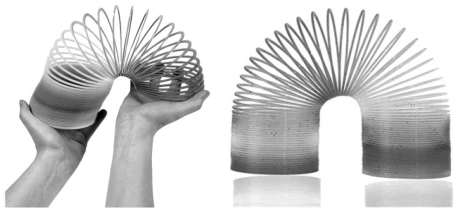
**(ii)** Find the probability that the school chosen at random has 50 or fewer computers.

**(iii)** (a) Find the probability that the school chosen at random has no more than 20 computers.

**OR**

(b) Find the probability that the school chosen at random has 10 or less than 10 computers.

**38.** Kaira was playing with a slinky spring and asked her brother Shyam, what is the shape thus formed called. Shyam explained her that the shape formed is a parabola. He also explained her that parabola is the graphical representation of a quadratic polynomial.



Based on the above information, answer the following questions.

**(i)** Shyam drawn a parabola passing through (–4, 3), (–1, 0), (1, 8), (0, 3), (–3, 0) and (–2, –1) on the graph paper, then what are the zeroes of the polynomial representing the graph?

**(ii)** Find the sum of zeros of a quadratic polynomial $ax^2 + bx + c$, $a \neq 0$.

**(iii)** (a) Find the of rational roots of the quadratic equation $x^2 - 5x + 6 = 0$, if exist.

**OR**

(b) Find the equal roots of the quadratic equation $9x^2 + 6x + 1 = 0$.

# Self Evaluation Sheet

*Once you complete **SQP-10**, check your answers with the given solutions and fill your marks in the marks obtained column according to the marking scheme. Performance Analysis Table given at the bottom will help you to check your readiness.*

| Q.No. | Chapter | Marks Per Question | Marks Obtained |
|---|---|---|---|
| 1 | Circles | 1 | |
| 2 | Triangles | 1 | |
| 3 | Quadratic Equations | 1 | |
| 4 | Coordinate Geometry | 1 | |
| 5 | Circles | 1 | |
| 6 | Introduction to Trigonometry | 1 | |
| 7 | Real Numbers | 1 | |
| 8 | Triangles | 1 | |
| 9 | Polynomials | 1 | |
| 10 | Circles | 1 | |
| 11 | Introduction to Trigonometry | 1 | |
| 12 | Areas Related to Circles | 1 | |
| 13 | Triangles | 1 | |
| 14 | Surface Areas and Volumes | 1 | |
| 15 | Introduction to Trigonometry | 1 | |
| 16 | Statistics | 1 | |
| 17 | Introduction to Trigonometry | 1 | |
| 18 | Surface Areas and Volumes | 1 | |
| 19 | Probability | 1 | |
| 20 | Arithmetic Progressions | 1 | |
| 21 | Pair of Linear Equations in Two Variables | 2 | |
| 22 | Triangles | 2 | |
| 23 | Surface Areas and Volumes | 2 | |
| 24 | Coordinate Geometry / Coordinate Geometry | 2 | |
| 25 | Introduction to Trigonometry / Introduction to Trigonometry | 2 | |
| 26 | Coordinate Geometry | 3 | |
| 27 | Triangles | 3 | |
| 28 | Introduction to Trigonometry / Introduction to Trigonometry | 3 | |
| 29 | Polynomials | 3 | |
| 30 | Quadratic Equations / Quadratic Equations | 3 | |
| 31 | Some Applications of Trigonometry | 3 | |
| 32 | Real Numbers | 5 | |
| 33 | Arithmetic Progressions / Arithmetic Progressions | 5 | |
| 34 | Areas Related to Circles / Areas Related to Circles | 5 | |
| 35 | Statistics | 5 | |
| 36 | Triangles | 1 + 1 + 2 | |
| 37 | Probability | 1 + 1 + 2 | |
| 38 | Quadratic Equations | 1 + 1 + 2 | |
| | **Total** | **80** | ..... |
| | | **Percentage** | .....% |

## Performance Analysis Table

| If your marks is | | |
|---|---|---|
| > 90% | TREMENDOUS! | ➢ *You are done! Keep on revising to maintain the position.* |
| 81-90% | EXCELLENT! | ➢ *You have to take only one more step to reach the top of the ladder. Practise more.* |
| 71-80% | VERY GOOD! | ➢ *A little bit of more effort is required to reach the 'Excellent' bench mark.* |
| 61-70% | GOOD! | ➢ *Revise thoroughly and strengthen your concepts.* |
| 51-60% | FAIR PERFORMANCE! | ➢ *Need to work hard to get through this stage.* |
| 40-50% | AVERAGE! | ➢ *Try hard to boost your average score.* |

# SQP 10 SOLUTIONS

**1. (c) :** Two tangents can be drawn to a circle from a point lying outside the circle.

**2. (a) :** Given, $\Delta ABC \sim \Delta PQR$

$$\frac{AB}{PQ}=\frac{BC}{QR}=\frac{AC}{PR} \Rightarrow \frac{6}{3}=\frac{8}{PR} \Rightarrow PR=\frac{8\times 3}{6}=4$$

**3. (d) :** We have, $3\sqrt{3}x^2+10x+\sqrt{3}=0$

Discriminant, $D = b^2 - 4ac$

where $a=3\sqrt{3}, b=10, c=\sqrt{3}$

$\therefore \quad D=(10)^2-4(3\sqrt{3})(\sqrt{3}) = 100 - 36 = 64$

**4. (c) :** Let $P(x, y)$ be the midpoint of the line segment joining the points $A(2, 2)$ and $B(-4, -4)$.

$$\therefore \quad x=\frac{2+(-4)}{2} \text{ and } y=\frac{2+(-4)}{2}=\frac{-2}{2}=-1=\frac{-2}{2}=-1$$

$\therefore$ $P(-1, -1)$ is the midpoint of $AB$.

**5. (d) :** Here, $\angle ADC = \angle AEC$ (Angle in same segment)

$\Rightarrow \quad a = 40°$

Also, $\angle ABC + \angle AEC = 180°$ (Opp. $\angle s$ of cyclic quad.)

$\Rightarrow \quad b + 40° = 180° \Rightarrow b = 140°$

and $\angle AOC = 2\ \angle AEC = 2 \times 40° = 80°$

$\Rightarrow \quad c = 80°$

$\therefore \quad a + b + c = 40° + 140° + 80° = 260°$

**6. (a) :** We have, $\dfrac{4\sin\beta-3\cos\beta}{4\sin\beta+3\cos\beta}$

Dividing both numerator and denominator by cosβ, we get

$$\frac{4\tan\beta-3}{4\tan\beta+3}=\frac{3-3}{3+3}=0 \quad \left(\because \ \tan\beta=\frac{3}{4} \text{ (Given)}\right)$$

**7. (d) :** We have, $121 = 11 \times 11$, $1001 = 7 \times 11 \times 13$

Hence, H.C.F. of 121 & 1001 is 11.

**8. (c) :** In $\Delta ABC$, $DE \parallel AB$

$\therefore$ By basic proportionality theorem,

$$\frac{AE}{EC}=\frac{BD}{DC} \Rightarrow \frac{3}{y}=\frac{12}{x} \Rightarrow \frac{x}{y}=\frac{12}{3}=\frac{4}{1}$$

$\Rightarrow \quad x : y = 4 : 1$

**9. (d) :** Since, α, β are the zeroes of polynomial $p(x) = 4x^2 - 3x - 7$

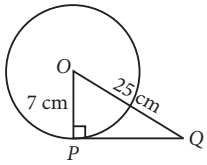
$\therefore$ Sum of zeroes, $(\alpha+\beta)=\dfrac{3}{4}$

and product of zeroes $(\alpha\beta)=\dfrac{-7}{4}$

Now, $\dfrac{1}{\alpha}+\dfrac{1}{\beta}=\dfrac{\alpha+\beta}{\alpha\beta}=\dfrac{\frac{3}{4}}{\frac{-7}{4}}=\dfrac{-3}{7}$

**10. (c) :** $\because$ $PQ$ is a tangent to the circle.

$\therefore \quad OP \perp PQ$




In right $\Delta OPQ$,

$PQ^2 = OQ^2 - OP^2$

$= 25^2 - 7^2 = 625 - 49 = 576$

$\Rightarrow \quad PQ = 24$ cm

**11. (c) :** Given, $a = \cos A + \sin A$ ... (i)

and $b = \cos A - \sin A$ ... (ii)

Now, $\sqrt{\dfrac{a}{b}}+\sqrt{\dfrac{b}{a}}=\dfrac{\sqrt{a}}{\sqrt{b}}+\dfrac{\sqrt{b}}{\sqrt{a}}=\dfrac{a+b}{\sqrt{ab}}$

$$=\frac{\cos A+\sin A+\cos A-\sin A}{\sqrt{(\cos A+\sin A)(\cos A-\sin A)}} \quad \text{[Using (i) and (ii)]}$$

$$=\frac{2\cos A}{\sqrt{\cos^2 A-\sin^2 A}}=\frac{2\cos A}{\cos A\sqrt{1-\left(\frac{\sin A}{\cos A}\right)^2}}=\frac{2}{\sqrt{1-\tan^2 A}}$$

**12. (b) :** Required area of ring = 1386 – 962.5 = 423.5 $cm^2$

**13. (b) :** We have, $\dfrac{AD}{DB}=\dfrac{3}{4}$ and $\dfrac{AE}{EC}=\dfrac{6}{8}=\dfrac{3}{4}$

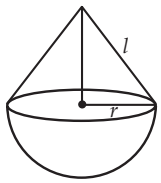
$$\therefore \quad \frac{AD}{DB}=\frac{AE}{EC} \Rightarrow DE \parallel BC$$

[By converse of Basic Proportionality Theorem]

**14. (b) :** Let $r$ be the radius of hemisphere and conical part. Also, let $l$ be the slant height of conical part.

Given, Surface area of hemisphere

= Surface area of conical part




$\Rightarrow \quad 2\pi r^2 = \pi rl \Rightarrow 2r = l$

$\Rightarrow \quad \dfrac{r}{l}=\dfrac{1}{2}$

$\therefore$ Required ratio = 1 : 2

**15. (c) :** Given, $\sec\theta + \tan\theta = 11$ ... (i)

$$\Rightarrow \quad \frac{(\sec\theta+\tan\theta)(\sec\theta-\tan\theta)}{(\sec\theta-\tan\theta)}=11$$

$$\Rightarrow \quad \frac{\sec^2\theta-\tan^2\theta}{\sec\theta-\tan\theta}=11$$

$$\Rightarrow \quad \frac{1}{\sec\theta-\tan\theta}=11 \qquad [\because \ \sec^2\theta = 1 + \tan^2\theta]$$

$$\Rightarrow \quad \frac{1}{11} = \sec\theta - \tan\theta \qquad \text{... (ii)}$$

On adding (i) and (ii), we get $2\sec\theta = 11 + \dfrac{1}{11}$

$$\Rightarrow \quad \sec\theta=\frac{121+1}{11\times 2}=\frac{122}{22}=\frac{61}{11}$$

**16. (c) :** Mean, $\bar{x} = \frac{\sum f_i x_i}{\sum f_i} \Rightarrow 6 = \frac{2p + 52}{11}$

$\Rightarrow$ $66 = 2p + 52 \Rightarrow 2p = 14 \Rightarrow p = 7$

**17. (b) :** Given, $\sin\theta = \cos\theta$

$\Rightarrow \frac{\sin\theta}{\cos\theta} = 1 \Rightarrow \tan\theta = 1$

$\Rightarrow$ $\tan\theta = \tan 45°$ [$\because \tan 45° = 1$]

$\Rightarrow$ $\theta = 45°$

**18. (a) :** Total surface area of solid = Curved surface area of cylinder + Curved surface area of hemisphere

$= 2\pi rh + 2\pi r^2 = 2\pi r(h + r)$

**19. (a) :** Given, $P(E) = 0.45$

We know, $P(\bar{E}) = 1 - P(E) = 1 - 0.45 = 0.55$

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

**20. (a) :** Clearly, Reason (R) is true.

Now, $a_7 - a_{11} = 300$

$\Rightarrow$ $(a + 6d) - (a + 10d) = 300$ [$\because a_n = a + (n - 1)d$]

$\Rightarrow$ $-4d = 300 \Rightarrow d = -75$, which is true.

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

**21.** We have, $7x - 5y = 11$ ...(i)

and $3x + 4y = 17$ ...(ii)

Multiplying (i) by 4 and (ii) by 5, we get

$28x - 20y = 44$ ...(iii)

$15x + 20y = 85$ ...(iv)

Adding (iii) and (iv), we get

$43x = 129 \Rightarrow x = \frac{129}{43} \Rightarrow x = 3$

Substituting $x = 3$ in (i), we get

$7(3) - 5y = 11$

$\Rightarrow$ $-5y = 11 - 21 \Rightarrow 5y = 10 \Rightarrow y = 2$

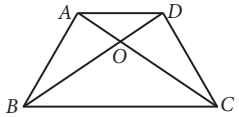
Hence, $x = 3$ and $y = 2$ is the required solution.

**22.** In $\Delta AOB$ and $\Delta COD$, we have

$\angle AOB = \angle COD$

(Vertically opposite angles)

$\frac{AO}{CO} = \frac{OB}{OD} = \frac{1}{2}$ (Given)




$\Rightarrow$ $\Delta AOB \sim \Delta COD$ (By SAS similarity criterion)

$\Rightarrow \frac{AB}{CD} = \frac{AO}{CO} \Rightarrow \frac{4}{CD} = \frac{1}{2} \Rightarrow CD = 8$ cm

**23.** Given, radius of cone $(r) = \frac{14}{2} = 7$ cm

Height of cone $(h) = 8$ cm

Slant height $l = \sqrt{r^2 + h^2} = \sqrt{7^2 + 8^2} = \sqrt{113}$ cm

CSA of cone $= \pi rl = \frac{22}{7} \times 7 \times \sqrt{113} = 22\sqrt{113}$ m$^2$

**24.** (a) Since, $A$ and $B$ lie on the circle having centre $O$.

$\therefore$ $OA = OB$ [Each equal to radius]

$\Rightarrow$ $\sqrt{(4-2)^2 + (3-3)^2} = \sqrt{(x-2)^2 + (5-3)^2}$

$\Rightarrow$ $2 = \sqrt{(x-2)^2 + 4} \Rightarrow 4 = (x-2)^2 + 4$

(Squaring both sides)

$\Rightarrow$ $(x-2)^2 = 0 \Rightarrow x - 2 = 0 \Rightarrow x = 2$

**OR**

**24.** (b) Let $P(x, y)$ be the required point.

Using section formula, we get

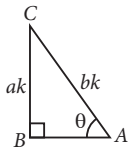
$x = \frac{3(3) + 2(-4)}{3 + 2} = \frac{1}{5}$, $y = \frac{3(-8) + 2(6)}{3 + 2} = \frac{-12}{5}$

$\therefore$ $\left(\frac{1}{5}, \frac{-12}{5}\right)$ is the required point.

**25.** (a) Consider a $\Delta ABC$ in which $\angle B = 90°$ and $\angle BAC = \theta$.

Given, $\sin\theta = \frac{a}{b} = \frac{BC}{AC}$

Let $BC = ak$ units and $AC = bk$ units




Using Pythagoras theorem, we have

$AC^2 = AB^2 + BC^2 \Rightarrow b^2k^2 = AB^2 + a^2k^2$

$\Rightarrow$ $AB^2 = b^2k^2 - a^2k^2$

$\Rightarrow$ $AB = \sqrt{b^2 - a^2}\,k$ units

$\therefore$ $\tan\theta = \frac{BC}{AB} = \frac{a}{\sqrt{b^2 - a^2}}$ and $\sec\theta = \frac{AC}{AB} = \frac{b}{\sqrt{b^2 - a^2}}$

**OR**

**25.** (b) Given, $\frac{\cos A + \sin A}{\cos A - \sin A} = \frac{\sqrt{3} + 1}{\sqrt{3} - 1}$

$\Rightarrow$ $\sqrt{3}\cos A - \cos A + \sqrt{3}\sin A - \sin A$

$= \sqrt{3}\cos A - \sqrt{3}\sin A + \cos A - \sin A$

$\Rightarrow$ $2\sqrt{3}\sin A = 2\cos A \Rightarrow \tan A = \frac{1}{\sqrt{3}} = \tan 30°$

$\therefore$ $A = 30°$

**26.** Let the required point be $P(x, 0)$.

Since, point $P(x, 0)$ is equidistant from points $A(2, -5)$ and $B(-2, 9)$

$\therefore$ $PA = PB \Rightarrow PA^2 = PB^2$

$\Rightarrow$ $(2 - x)^2 + (-5 - 0)^2 = (-2 - x)^2 + (9 - 0)^2$

$\Rightarrow$ $4 + x^2 - 4x + 25 = 4 + x^2 + 4x + 81 \Rightarrow 8x = -56 \Rightarrow x = -7$

Thus, the required point is $(-7, 0)$.

Now, the distance between $P(-7, 0)$

and the origin $= \sqrt{(0 + 7)^2 + (0 - 0)^2}$

$= \sqrt{49 + 0} = 7$ units

**27.** In $\Delta AOB$ and $\Delta COD$, we have

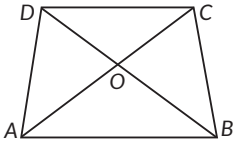
$\angle OAB = \angle OCD$ [Alternate interior angles]

$\angle OBA = \angle ODC$ [Alternate interior angles]

$\therefore$ $\Delta AOB \sim \Delta COD$ [By AA similarity]

$\Rightarrow \quad \frac{\text{ar}(\Delta AOB)}{\text{ar}(\Delta COD)} = \frac{AB^2}{CD^2} = \frac{(2CD)^2}{CD^2}$ [Given $AB = 2\,CD$]

$= \frac{4 \times CD^2}{CD^2} = 4$




$\Rightarrow \quad \text{ar}(\Delta COD) = \frac{1}{4} \times \text{ar}(\Delta AOB)$

$= \left(\frac{1}{4} \times 84\right) \text{cm}^2 = 21 \text{ cm}^2$

Hence, the area of $\Delta COD$ is 21 $\text{cm}^2$.

**28.** (a) We have , $\sin(A + 2B) = \frac{\sqrt{3}}{2}$

$\Rightarrow \quad \sin(A + 2B) = \sin 60° \qquad \left[\because \sin 60° = \frac{\sqrt{3}}{2}\right]$

$\Rightarrow \quad A + 2B = 60° \qquad ...(i)$

And $\cos(A + 4B) = 0$

$\Rightarrow \cos(A + 4B) = \cos 90° \qquad [\because \cos 90° = 0]$

$\Rightarrow \quad A + 4B = 90° \qquad ...(ii)$

Subtracting (i) from (ii), we get

$2B = 30° \Rightarrow B = 15°$

Putting the value of $B$ in (i), we get $A + 2(15°) = 60°$

$\Rightarrow A + 30° = 60° \Rightarrow A = 30°$

**OR**

**28.** (b) L.H.S. $= \frac{1}{\text{cosec}\,\theta - \cot\theta} - \frac{1}{\sin\theta}$

$= \frac{1}{(\text{cosec}\,\theta - \cot\theta)} \times \frac{(\text{cosec}\,\theta + \cot\theta)}{(\text{cosec}\,\theta + \cot\theta)} - \text{cosec}\,\theta$

$= \frac{\text{cosec}\,\theta + \cot\theta}{\text{cosec}^2\theta - \cot^2\theta} - \text{cosec}\,\theta$

$= \text{cosec}\,\theta + \cot\theta - \text{cosec}\,\theta \qquad [\because \text{cosec}^2\theta - \cot^2\theta = 1]$

$= \text{cosec}\,\theta - (\text{cosec}\,\theta - \cot\theta)$

$= \frac{1}{\sin\theta} - \frac{(\text{cosec}\,\theta - \cot\theta)}{1} \times \frac{(\text{cosec}\,\theta + \cot\theta)}{(\text{cosec}\,\theta + \cot\theta)}$

$= \frac{1}{\sin\theta} - \frac{\text{cosec}^2\,\theta - \cot^2\theta}{\text{cosec}\,\theta + \cot\theta} = \frac{1}{\sin\theta} - \frac{1}{\text{cosec}\,\theta + \cot\theta}$

= R.H.S.

**29.** Let $f(x) = kx^2 + 41x + 42$

Product of zeroes $= \frac{42}{k}$

Given, product of zeroes = 7

$\therefore \quad 42/k = 7 \Rightarrow 42 = 7k$

$\Rightarrow \quad k = 6$

Putting $k = 6$ in polynomial

$p(x) = (k - 4)x^2 + (k + 1)x + 5$, we get

$p(x) = (6 - 4)x^2 + (6 + 1)x + 5$

$\Rightarrow \quad p(x) = 2x^2 + 7x + 5$

For zeroes of $p(x)$, put $2x^2 + 7x + 5 = 0$

$2x^2 + 5x + 2x + 5 = 0$

$\Rightarrow \quad x(2x + 5) + 1(2x + 5) = 0$

$\Rightarrow \quad (x + 1)(2x + 5) = 0$

$\Rightarrow \quad x = -1, x = -5/2$

$\therefore$ Required zeroes are –1 and –5/2.

**30.** (a) Seven years ago, let Swati's age be $x$ years.

Then, Varun's age was $5x^2$ years.

$\therefore$ Swati's present age = $(x + 7)$ years and

Varun's present age = $(5x^2 + 7)$ years

Three years hence, we have

Swati's age = $(x + 7 + 3)$ years = $(x + 10)$ years

Varun's age = $(5x^2 + 7 + 3)$ years = $(5x^2 + 10)$ years

According to question, $x + 10 = \frac{2}{5}(5x^2 + 10)$

$\Rightarrow \quad x + 10 = 2x^2 + 4$

$\Rightarrow \quad 2x^2 - x - 6 = 0 \Rightarrow 2x^2 - 4x + 3x - 6 = 0$

$\Rightarrow \quad 2x(x - 2) + 3(x - 2) = 0 \Rightarrow (2x + 3)(x - 2) = 0$

$\Rightarrow \quad x - 2 = 0 \qquad [\because \; 2x + 3 \neq 0 \text{ as } x > 0]$

$\Rightarrow \quad x = 2$

Hence, Swati's present age = (2 + 7) years = 9 years

Varun's present age = $(5 \times 2^2 + 7)$ years = 27 years

**OR**

**30.** (b) We have, $\frac{x+4}{x-4} + \frac{x-4}{x+4} = \frac{10}{3} \qquad ...(i)$

Putting $\frac{x+4}{x-4} = y$ in (i), we get

$y + \frac{1}{y} = \frac{10}{3} \Rightarrow \frac{y^2+1}{y} = \frac{10}{3} \Rightarrow 3y^2 + 3 = 10y$

$\Rightarrow \quad 3y^2 - 10y + 3 = 0 \Rightarrow 3y^2 - 9y - y + 3 = 0$

$\Rightarrow \quad 3y(y - 3) - 1(y - 3) = 0 \Rightarrow (y - 3)(3y - 1) = 0$

$\Rightarrow \quad y = 3 \text{ or } y = 1/3$

Now, $\frac{x+4}{x-4} = 3 \Rightarrow x + 4 = 3x - 12$

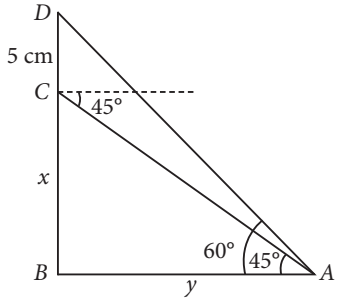
$\Rightarrow 2x = 16 \Rightarrow x = 8$

And $\frac{x+4}{x-4} = \frac{1}{3} \Rightarrow 3x + 12 = x - 4$

$\Rightarrow 2x = -16 \Rightarrow x = -8$

So, required roots are $\pm 8$.

**31.** Let $BC$ be the height of the tower and $CD$ be the height of the pole. Let $BC = x$ m and $AB = y$ m




Now, in $\Delta ABC$,

$\tan 45° = \frac{BC}{AB} \Rightarrow 1 = \frac{x}{y}$

$\Rightarrow \quad y = x \qquad ... (i)$

Now, in $\Delta ABD$,

$\tan 60° = \frac{BD}{AB} \Rightarrow \sqrt{3} = \frac{x+5}{y}$

$\Rightarrow \quad x+5=\sqrt{3}y \Rightarrow \sqrt{3}x=x+5 \qquad (\because\ x=y)$

$\Rightarrow \quad (\sqrt{3}-1)x=5 \ \Rightarrow \ x=\dfrac{5}{\sqrt{3}-1}\times\dfrac{\sqrt{3}+1}{\sqrt{3}+1}=\dfrac{5(\sqrt{3}+1)}{2}$

$=\dfrac{5(2.732)}{2}=6.83$ m

Hence, height of the tower = 6.83 m

**32.** Time taken by *A* to complete 1 round

$$=\frac{1980}{330}=6 \text{ mins}$$

Time taken by *B* to complete 1 round

$$=\frac{1980}{198}=10 \text{ mins}$$

Time taken by *C* to complete 1 round

$$=\frac{1980}{220}=9 \text{ mins}$$

$\therefore$ Required number of minutes, when the three cyclists will meet at the starting point again is LCM (6, 10, 9) minutes.

$\because \quad 6=2\times3,\ 10=2\times5$ and $9=3\times3$

$\therefore \quad$ LCM $(6, 10, 9)=2\times5\times3^2=90$ minutes

So, they will meet after 90 minutes or 1 hour 30 mins.

**33.** (a) Given, A.P. is –7, –12, –17, –22, ....

and $n^{\text{th}}$ term of given A.P. is –82.

$\therefore \quad a_n=a+(n-1)d$

$\Rightarrow \quad -82=-7+(n-1)(-5)[\because\ d=-12-(-7)=-12+7=-5]$

$\Rightarrow \quad -82=-7-5n+5 \ \Rightarrow \ -82=-5n-2$

$\Rightarrow \quad 5n=82-2 \Rightarrow 5n=80 \Rightarrow n=16$

$\therefore \quad 16^{\text{th}}$ term of given A.P. is –82

$\therefore \quad 17^{\text{th}}$ term = –82 – 5 = –87

$18^{\text{th}}$ term = –87 – 5 = –92

$19^{\text{th}}$ term = –92 – 5 = –97

$20^{\text{th}}$ term = –97 – 5 = –102

Hence, –100 is not any term of given A.P.

**OR**

**33.** (b) Let the three numbers in A.P. are $a-d, a, a+d$.

According to question, $a-d+a+a+d=12$

$\Rightarrow \quad 3a=12 \ \Rightarrow \ a=4$

Also, $(4-d)^3+(4)^3+(4+d)^3=288$

$\Rightarrow \quad 64-48d+12d^2-d^3+64+64+48d+12d^2+d^3=288$

$\Rightarrow \quad 24d^2+192=288 \ \Rightarrow \ d^2=4 \ \Rightarrow \ d=\pm2$

$\therefore \quad$ The numbers will be $a-d, a, a+d$

$\Rightarrow \quad 4+2, 4, 4-2=6, 4, 2$, if $d=-2$

or $\quad 4-2, 4, 4+2=2, 4, 6$, if $d=2$

**34.** (a) If two circles touch externally, then the distance between their centres is equal to the sum of their radii. Let the radii of the two circles be $r_1$ cm and $r_2$ cm respectively. Let $C_1$ and $C_2$ be the centres of the given circles.

Then, $r_1+r_2=C_1C_2$

$\Rightarrow \quad r_1+r_2=14 \qquad$ ...(i) $\qquad [\because\ C_1C_2=14$ cm (Given)]

It is given that the sum of the areas of two circles is equal to $130\ \pi$ cm$^2$.

$\therefore \quad \pi r_1^2+\pi r_2^2=130\pi$

$\Rightarrow \quad r_1^2+r_2^2=130 \qquad$ ...(ii)

Now, $(r_1+r_2)^2=r_1^2+r_2^2+2r_1r_2$

$\Rightarrow \quad 14^2=130+2r_1r_2 \qquad$ [Using (i) and (ii)]

$\Rightarrow \quad 196-130=2r_1r_2$

$\Rightarrow \quad 66=2r_1r_2$

$\Rightarrow \quad r_1r_2=33 \qquad$ ...(iii)

Now, $(r_1-r_2)^2=r_1^2+r_2^2-2r_1r_2$

$\Rightarrow \quad (r_1-r_2)^2=130-2\times33 \qquad$ [Using (ii) and (iii)]

$\Rightarrow \quad (r_1-r_2)^2=64$

$\Rightarrow \quad r_1-r_2=\pm(8) \qquad$ ...(iv)

Solving (i) and (iv), we get $r_1=11$ and $r_2=3$

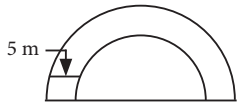
or $\quad r_1=3$ and $r_2=11$

Hence, the radii of the two circles are 11 cm and 3 cm.

**OR**

**34.** (b) Let $R$ m and $r$ m be the radius of outer and inner semi-circular plot.

Given, perimeter of plot = $163\dfrac{3}{7}$ m




$\Rightarrow \quad (\pi+2)r=\dfrac{1144}{7}$

$\Rightarrow \quad \left(\dfrac{22}{7}+2\right)r=\dfrac{1144}{7}\Rightarrow\dfrac{36}{7}r=\dfrac{1144}{7} \ \Rightarrow \ r=\dfrac{1144}{36}=\dfrac{286}{9}$

$\therefore \quad R=\dfrac{286}{9}+5=\dfrac{286+45}{9}=\dfrac{331}{9}$

(i) Area of the path $=\dfrac{\pi}{2}(R^2-r^2)=\dfrac{22}{2\times7}(R+r)(R-r)$

$=\dfrac{11}{7}\left(\dfrac{331}{9}+\dfrac{286}{9}\right)\left(\dfrac{331}{9}-\dfrac{286}{9}\right)=\dfrac{11}{7}\times\dfrac{617}{9}\times\dfrac{45}{9}=538.65\text{ m}^2$

(ii) Cost of gravelling 1 m$^2$ path = ₹ 12

$\therefore \quad$ Cost of gravelling 538.65 m$^2$ path = ₹$(12\times538.65)$

= ₹ 6463.80

(iii) Area of the plot $=\pi r^2=\left(\dfrac{22}{7}\times\dfrac{286}{9}\times\dfrac{286}{9}\right)\text{m}^2$

$=3173.74\text{ m}^2$

Now, cost of turfing 1 m$^2$ plot = ₹$\dfrac{45}{100}$

$\therefore \quad$ Cost of turfing 3173.74 m$^2$ plot = ₹ $\left(\dfrac{45}{100}\times3173.74\right)$

= ₹ 1428.18

**35.** Here, the class intervals are not in inclusive form. So, we first convert them in inclusive form by subtracting 0.5 from lower limit and adding 0.5 to the upper limit. The given frequency distribution in inclusive is as follows.

| Class-interval | Frequency |
|---|---|
| 0.5-4.5 | 2 |
| 4.5-8.5 | 5 |
| 8.5-12.5 | 8 |
| 12.5-16.5 | 9 |
| 16.5-20.5 | 12 |
| 20.5-24.5 | 14 |
| 24.5-28.5 | 14 |
| 28.5-32.5 | 15 |
| 32.5-36.5 | 11 |
| 36.5-40.5 | 10 |

Here, maximum frequency is 15, which lies in the interval 28.5-32.5.

$\therefore$ Modal class is 28.5 – 32.5.

So, $l = 28.5, f_1 = 15, f_0 = 14, f_2 = 11, h = 4$

$$\therefore \quad \text{Mode} = l + \left(\frac{f_1 - f_0}{2f_1 - f_0 - f_2}\right) \times h$$

$$= 28.5 + \left(\frac{15-14}{2\times 15 - 14 - 11}\right) \times 4 = 28.5 + \frac{1}{5} \times 4$$

$= 28.5 + 0.8 = 29.3$

**36. (i)** If $\Delta AED$ and $\Delta BEC$ are similar by SAS similarity rule, then their corresponding sides are proportional.

$$\therefore \quad \frac{AE}{BE} = \frac{DE}{CE} = \frac{AD}{BC}$$

**(ii)** $BC = \sqrt{CE^2 + EB^2} = \sqrt{8^2 + 6^2} = \sqrt{64 + 36}$

$= \sqrt{100} = 10$ cm

**(iii)** (a) Since, $\Delta ADE$ and $\Delta BCE$ are similar.

$$\therefore \quad \frac{\text{Perimeterof } \Delta ADE}{\text{Perimeter of } \Delta BCE} = \frac{AD}{BC}$$

$$\Rightarrow \quad \frac{1}{2} = \frac{AD}{10} \quad \Rightarrow \quad AD = 5 \text{ cm}$$

**OR**

(b) $$\frac{\text{Perimeter of } \Delta ADE}{\text{Perimeter of } \Delta BCE} = \frac{ED}{CE}$$

$$\Rightarrow \quad \frac{1}{2} = \frac{ED}{8} \Rightarrow \quad ED = 4 \text{ cm}$$

**37. (i)** Number of schools that have more than 100 computers = 80

Total number of schools = 1000

So, required probability $= \frac{80}{1000} = 0.08$

**(ii)** Number of schools having 50 or fewer computers = 290 + 200 + 250 = 740

So, required probability $= \frac{740}{1000} = 0.74$

**(iii)** (a) Number of schools having not more than 20 computers = 250 + 200 = 450

So, required probability $= \frac{450}{1000} = 0.45$

**OR**

(b) Number of schools having 10 or less than 10 computers = 250

So, required probability $= \frac{250}{1000} = 0.25$

**38. (i)** The zeroes of the polynomial are the points which intersects $x$-axis *i.e.*, whose $y$-coordinate is 0.

$\therefore$ Zeroes are –1 and –3.

**(ii)** Sum of zeroes of quadratic polynomial $ax^2 + bx + c$, $a \neq 0$ is $\frac{-b}{a}$.

**(iii)** (a) To have rational roots, discriminant ($D = b^2 - 4ac$) should be > 0 and also a perfect square.

Here, $D = (-5)^2 - 4(1)(6) = 25 - 24 = 1$, which is a perfect square. Thus given equation has rational roots.

Now, we have $x^2 - 5x + 6 = 0 \Rightarrow x^2 - 3x - 2x + 6 = 0$

$\Rightarrow \quad (x - 3)(x - 2) = 0 \Rightarrow x = 3, 2$

**OR**

(b) To have equal roots, discriminant ($D = b^2 - 4ac$) should be = 0.

Here, $D = 6^2 - 4(9)(1) = 36 - 36 = 0$

Given, $9x^2 + 6x + 1 = 0$

$\Rightarrow \quad 9x^2 + 3x + 3x + 1 = 0 \Rightarrow 3x(3x + 1) + 1(3x + 1) = 0$

$\Rightarrow \quad (3x + 1)(3x + 1) = 0$

$\Rightarrow \quad x = \frac{-1}{3}, \frac{-1}{3}$

☺ ☺ ☺

mtG

# CBSE ScoreMore 15 SAMPLE PAPERS SERIES

CLASS 10

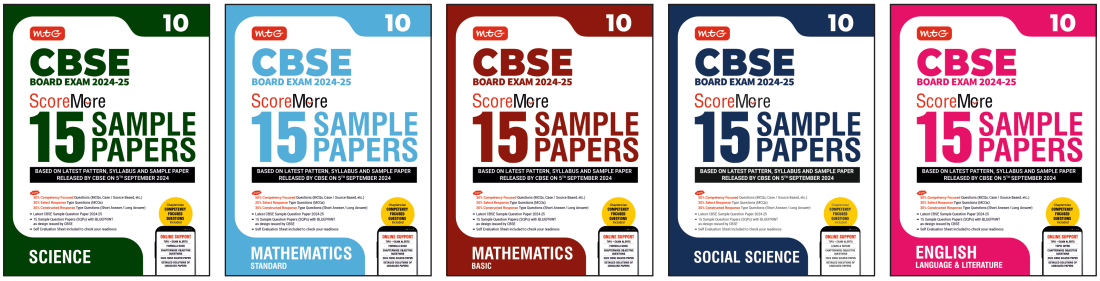
## USER BENEFITS

MTG Score More 15 Sample Papers series for CBSE offers following benefits for students preparing for the 2024-25 board exams:

- **Aligned with Latest CBSE Pattern and Syllabus :** The sample papers are designed according to the latest CBSE guidelines, ensuring that students practice questions that reflect the actual exam format and difficulty level.
- **Comprehensive Practice with 15 + 1 Sample Papers :** The series includes 15 sample question papers along with the latest CBSE sample paper for 2024-25, giving students ample opportunities to test their knowledge and improve their exam readiness. (SQPs 11 to 15 Unsolved)
- **Exam Blueprint :** The sample papers follow the CBSE blueprint, offering a clear structure of marks distribution and question formats, which helps students strategically prepare for the exam.
- **Competency Focused Questions :** The series includes questions designed to enhance analytical, reasoning, and problem-solving skills. These questions help students apply concepts learnt to real-life situations, aligning with CBSE's focus on competency based learning and preparing them for future academic challenges.
- **Variety of Question Types :** The book covers Objective type questions (MCQs (Assertion & Reason and Matching Type), and Subjective type questions (Very Short Answer, Short Answer I, Short Answer II, Long Answer and Case Based), preparing students for the different types of questions they may encounter.
- **Detailed Solutions :** Each sample paper comes with step-by-step solutions, helping students understand the correct approach to solving each problem and learning from their mistakes.
- **Self Evaluation Sheet :** The inclusion of a self-evaluation sheet allows students to assess their performance, identify areas of improvement, and track their progress effectively.
- **Online Support :** Additional support is provided online, including tips, exam alerts, formula books, chapter-wise objective questions, 2024 CBSE solved paper and solution of unsolved SQPs (11 to 15), further aiding students in their preparation.

This comprehensive approach ensures that students are well-prepared, confident, and equipped with the skills needed for success in the CBSE board exams and beyond.

₹275 Each




Latest

**50% Competency Focused** Questions (MCQs, Case / Source Based, etc.)
**20% Select Response** Type Questions (MCQs)
**30% Constructed Response** Type Questions (Short Answer/Long Answer)

**Buy the complete Book here - CBSE Class 10 Sample Paper**