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CLASS 10 MATHEMATICS BASIC - PRACTICE QUESTIONS

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CLASS 10

Mathematics Basic

Chapterwise Important Questions

14 sections | 56 original questions | 2026-27

Read each chapter, attempt the questions, and support explanations with working or textbook evidence.

Choose a chapter or topic

Mathematics	
Chapter 1	Real Numbers
Chapter 2	Polynomials
Chapter 3	Pair of Linear Equations in Two Variables
Chapter 4	Quadratic Equations
Chapter 5	Arithmetic Progressions
Chapter 6	Triangles
Chapter 7	Coordinate Geometry
Chapter 8	Introduction to Trigonometry
Chapter 9	Some Applications of Trigonometry
Chapter 10	Circles
Chapter 11	Areas Related to Circles
Chapter 12	Surface Areas and Volumes
Chapter 13	Statistics
Chapter 14	Probability

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CHAPTER 1

Real Numbers

Mathematics

1. Find the HCF and LCM of 72 and 120 using prime factorisation.
2. Explain why 7x11x13+13 is composite.
3. Show that 5+sqrt(2) is irrational.
4. Two bells ring every 12 and 18 minutes. When will they next ring together after a common start?

CHAPTER 2

Polynomials

Mathematics

1. Find the zeroes of x^2-5x+6.
2. Verify the relation between the zeroes and coefficients of $2x^2$-7x+3.
3. Form a quadratic polynomial with zeroes 2 and -4.
4. A quadratic polynomial has sum of zeroes 6 and product 8. Write one such polynomial.

CHAPTER 3

Pair of Linear Equations in Two Variables

Mathematics

1. Solve x+y=7 and x-y=1.
2. State whether 2x+3y=6 and 4x+6y=12 have a unique solution.
3. Two pens and one notebook cost Rs 50; one pen and one notebook cost Rs 35. Find their prices.

4. Find the value of k for which x+2y=5 and 2x+ky=10 have infinitely many solutions.

CHAPTER 4

Quadratic Equations

Mathematics

1. Solve x^2-7x+12=0 by factorisation.
2. Find the discriminant of x^2+4x+4=0 and interpret it.
3. Solve $2x^2$-5x-3=0 using the quadratic formula.
4. A rectangle has length 3 cm greater than width and area 40 cm^2. Find its dimensions.

CHAPTER 5

Arithmetic Progressions

Mathematics

1. Find the 15th term of 3, 7, 11, 15,...
2. Which term of 5, 8, 11,... is 50?
3. Find the sum of the first 20 positive integers.
4. A student saves Rs 10 in week one and increases the weekly saving by Rs 5. Find the saving in week ten.

CHAPTER 6

Triangles

Mathematics

1. State the basic proportionality theorem.

2. Two similar triangles have corresponding sides 3 cm and 6 cm. Find their area ratio.

3. In triangle ABC, DE is parallel to BC, AD=3 cm, DB=2 cm and AE=4.5 cm. Find EC.

4. Explain how equal corresponding angles can establish similarity.

CHAPTER 7

Coordinate Geometry

Mathematics

1. Find the distance between (1,2) and (4,6).

2. Find the midpoint of the segment joining (-2,4) and (6,8).

3. Find the point dividing (2,3) and (8,9) internally in the ratio 1:2.

4. Determine whether the points (0,0), (3,4) and (6,8) are collinear using distances.

CHAPTER 8

Introduction to Trigonometry

Mathematics

1. If tan A=3/4 for acute A, find sin A and cos A.

2. Evaluate 2sin30+cos60, with angles in degrees.

3. Verify $\sin^2 A+\cos^2 A=1$ using a right triangle.

4. Express sec A and cosec A in terms of cos A and sin A.

CHAPTER 9

Some Applications of Trigonometry

Mathematics

1. A 10 m ladder makes a 60-degree angle with the ground. Find the height reached.
2. A tower casts a shadow of 20 m when the Sun's elevation is 45 degrees. Find its height.
3. Distinguish an angle of elevation from an angle of depression.
4. An observer 30 m from a building sees its top at 30 degrees. Find the building's height if the observer's eye is 1.5 m above ground.

CHAPTER 10

Circles

Mathematics

1. Explain why a tangent is perpendicular to the radius at contact.
2. Two tangents PA and PB are drawn from P. If PA=8 cm, find PB.
3. A point P is 13 cm from a circle's centre and the radius is 5 cm. Find the tangent length.
4. Draw a circle and two tangents from an external point, marking equal tangent segments.

CHAPTER 11

Areas Related to Circles

Mathematics

1. Find the area of a 90-degree sector of radius 14 cm, using pi=22/7.
2. Find the length of a semicircular arc of radius 7 cm.

3. A circular park of radius 10 m has a 2 m wide path outside it. Find the path's area in terms of pi.

4. Explain how a minor segment's area is obtained from a sector and a triangle.

CHAPTER 12

Surface Areas and Volumes

Mathematics

1. Find the volume of a cylinder of radius 7 cm and height 5 cm.

2. A cone and hemisphere share radius 3 cm. Find their combined volume if the cone height is 4 cm.

3. A sphere is melted and recast into smaller spheres. Which quantity is conserved?

4. A solid toy is made by joining a hemisphere to one circular end of a cylinder. Both have radius 3 cm, and the cylinder is 7 cm high. Find the total exposed surface area, including the flat base, in terms of pi.

CHAPTER 13

Statistics

Mathematics

1. Find the mean of 4, 6, 8, 10 and 12.

2. Find the modal class for frequencies 4, 9, 13 and 7 in successive equal-width classes.

3. Explain what cumulative frequency tells you.

4. Use the grouped-data mean formula for intervals 0-10, 10-20 and 20-30 with frequencies 2, 3 and 5.

CHAPTER 14

Probability

Mathematics

1. A fair die is rolled. Find the probability of a number greater than 4.

2. A bag contains 4 red, 3 green and 3 blue balls. Find the probability of not drawing red.

3. A card is drawn from a standard 52-card deck. Find the probability of a king.

4. If P(E)=0.35, find P(not E) and explain the complementary-event rule.

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