

CLASS 10 — MATHEMATICS

Chapter: Coordinate Geometry

Practice Worksheet | CBSE Pattern

Maximum Marks: 40

Time Allowed: 1 hour 30 minutes

Name: _____

Class/Section: _____ Date: _____

General Instructions:

1. All questions are compulsory.
2. Read each question carefully before answering.
3. Show complete working for questions requiring calculations or proofs.
4. Select only one option for each MCQ.
5. Marks for each question are indicated alongside the question.
6. Write mathematical steps clearly and use appropriate notation.

This paper has 21 questions in five sections: A (Q1–Q10, 1 mark each), B (Q11–Q15, 2 marks each), C (Q16–Q19, 3 marks each), D (Q20, 4 marks) and E (Q21, case study, 4 marks).

SECTION A

Multiple Choice Questions — Q1 to Q10 carry 1 mark each.

- Q1.** The distance of the point $(-6, 8)$ from the origin is **[1 mark]**
(A) 14 units (B) 2 units
(C) 10 units (D) 100 units
- Q2.** The distance between the points $(1, -2)$ and $(4, 2)$ is **[1 mark]**
(A) 5 units (B) 25 units
(C) 7 units (D) $\sqrt{7}$ units
- Q3.** The mid-point of the line segment joining $(-3, 5)$ and $(7, -1)$ is **[1 mark]**
(A) $(-2, 3)$ (B) $(5, -3)$
(C) $(2, 2)$ (D) $(4, 4)$
- Q4.** The point $(0, -4)$ lies on the **[1 mark]**
(A) positive x-axis (B) negative x-axis
(C) positive y-axis (D) negative y-axis
- Q5.** The ratio in which the x-axis divides the line segment joining $(5, -6)$ and $(-1, 2)$ is **[1 mark]**
(A) 1 : 3 (B) 3 : 1
(C) 2 : 3 (D) 3 : 2

- Q6.** If $(2, k)$ is the mid-point of the line segment joining $(-1, 3)$ and $(5, 7)$, then the value of k is **[1 mark]**
(A) 3 (B) 4
(C) 7 (D) 5
- Q7.** The point which divides the line segment joining $A(1, 2)$ and $B(7, 8)$ internally in the ratio $1 : 2$ is **[1 mark]**
(A) $(3, 4)$ (B) $(5, 6)$
(C) $(4, 5)$ (D) $(2, 3)$
- Q8.** If the point $P(x, y)$ is equidistant from $A(3, 6)$ and $B(-3, 4)$, then **[1 mark]**
(A) $x + 3y = 5$ (B) $3x + y = 5$
(C) $3x - y = 5$ (D) $x - 3y = 5$

In Q9 and Q10, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.

- Q9. Assertion (A):** The points $A(1, 2)$, $B(3, 4)$ and $C(5, 6)$ are collinear. **[1 mark]**
Reason (R): Three points A, B, C are collinear if the sum of two of the distances AB, BC, CA is equal to the third.
(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.
- Q10. Assertion (A):** The point $(-3, 0)$ lies on the y -axis. **[1 mark]**
Reason (R): Every point on the x -axis has its y -coordinate equal to 0.
(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.

SECTION B

Very Short Answer Questions — Q11 to Q15 carry 2 marks each.

Q11. Find the point on the x -axis which is equidistant from $A(7, 1)$ and $B(3, 5)$. **[2 marks]**

Q12. Find the values of y for which the distance between the points $P(-1, 3)$ and $Q(5, y)$ is 10 units. **[2 marks]**

Q13. Find the coordinates of the point which divides the line segment joining $A(-2, 4)$ and $B(8, -1)$ internally in the ratio $3 : 2$. **[2 marks]**

Q14. The centre of a circle is $C(-1, 2)$. If one end of a diameter is $P(3, -4)$, find the coordinates of the other end Q . **[2 marks]**

Q15. Find the ratio in which the y -axis divides the line segment joining $(-3, 5)$ and $(6, 2)$. Also find the point of intersection. **[2 marks]**

SECTION C

Short Answer Questions — Q16 to Q19 carry 3 marks each.

Q16. Show that the points A(1, 1), B(4, 5) and C(−3, 4) are the vertices of **[3 marks]** an isosceles right triangle.

Q17. Find the coordinates of the points of trisection of the line segment **[3 marks]** joining A(−3, 7) and B(6, −2).

Q18. A(2, 1), B(5, 2), C(x , 6) and D(1, y) are the vertices of a **[3 marks]** parallelogram ABCD, taken in order. Find the values of x and y .

Q19. Find the ratio in which the point P(m , 6) divides the line segment **[3 marks]** joining A(−4, 3) and B(2, 8). Also find the value of m .

SECTION D

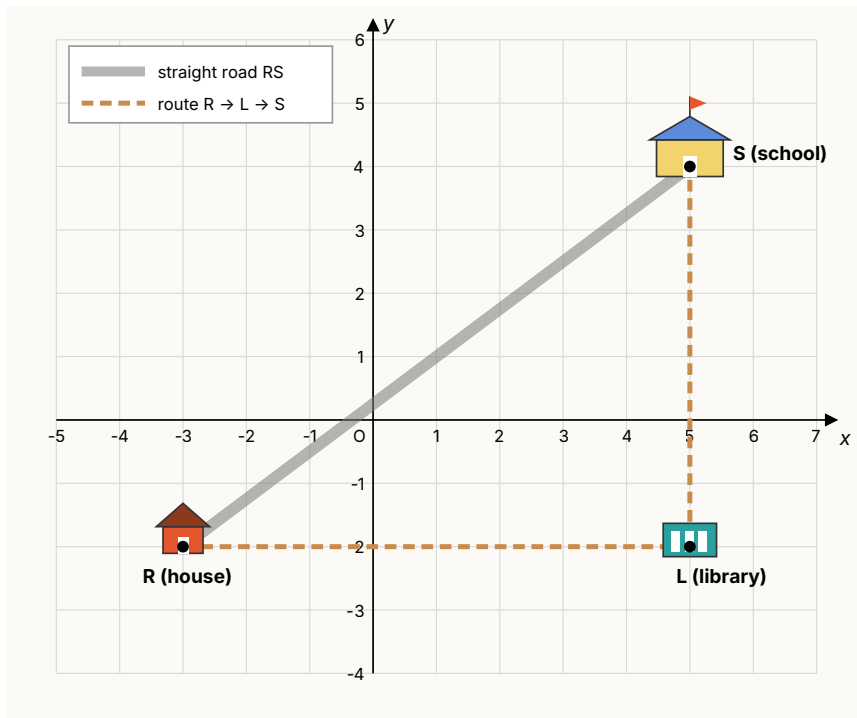
Long Answer Question — Q20 carries 4 marks.

- Q20.** Show that the points A(2, -1), B(3, 4), C(-2, 3) and D(-3, -2), taken in order, are the vertices of a rhombus. Is ABCD a square? Justify your answer. Also find the perimeter of the rhombus. **[4 marks]**

SECTION E

Case Study Based Question — Q21 carries 4 marks.

- Q21.** Riya marks some places in her town on a coordinate grid, taking 1 unit = 1 km. Her house is at $R(-3, -2)$, the library is at $L(5, -2)$ and her school is at $S(5, 4)$. A straight road joins her house to the school. She can also go to the library first and then to the school. **[4 marks]**



Based on the above information, answer the following questions:

- (i) Find the length of the straight road RS. **[1 mark]**
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- (ii) A bus stop B is exactly halfway along the road RS. **[1 mark]**
Find the coordinates of B.
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- (iii) Show that triangle RLS is right-angled at L. How **[2 marks]**
much shorter is the straight road RS than the route $R \rightarrow L \rightarrow S$?
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— End of Question Paper —