ExamPath

CLASS 9 MATHEMATICS · FBISE · UNIT 7

Unit 7: Coordinate Geometry — Exam Ready

25 multiple-choice questions Suggested time: **25 minutes** 1 mark each

Name: Date: Score: / 25

Circle one answer for each question. The answer key with explanations is on the last pages, so try every question before you check. These are practice questions, not official FBISE papers.

1. Which of these points lies in the fourth quadrant?

(A) (2, 3)
(B) (−2, 3)
(C) (−2, −3)
(D) (2, −3)

2. In which quadrant are both coordinates of a point negative?

(A) Second
(B) Fourth
(C) Third
(D) First

3. If $x < 0$ and $y > 0$, in which quadrant does $(-x, y)$ lie?

(A) I
(B) IV
(C) III
(D) II

4. To show with the distance formula that a quadrilateral is a rhombus, it is enough to show that:

(A) one pair of sides is parallel
(B) two sides are equal
(C) all four sides are equal
(D) its diagonals are equal

5. Find the perimeter of the triangle with vertices (0, 0), (3, 0) and (0, 4).

(A) 5
(B) 6
(C) 12
(D) 7

6. To show with the distance formula that a triangle is right-angled, we check that:

(A) two sides are equal
(B) the sum of two sides equals the third
(C) all three sides are equal
(D) the square of the longest side equals the sum of the squares of the other two

7. What are the coordinates of the origin?

(A) (1, 1)
(B) (0, 1)
(C) (0, 0)
(D) (1, 0)

8. The ordinate of every point on the x-axis is:

(A) 0
(B) 1
(C) −1
(D) x

9. A point lies on the x-axis. Which statement must be true?

(A) Both coordinates are equal
(B) Both coordinates are 0
(C) Its x-coordinate is 0
(D) Its y-coordinate is 0

10. The point (3, 5) is closer to which of these?

(A) The origin
(B) The x-axis
(C) Both equally
(D) The y-axis

11. All the bisectors of a line segment pass through:

(A) the x-axis
(B) its mid-point
(C) the y-axis
(D) the origin

12. The ends of a diameter of a circle are (4, 5) and (6, 9). Find the centre.

(A) (10, 14)
(B) (5, 7)
(C) (1, 2)
(D) (7, 5)

13. Where does the point (0, −5) lie?

(A) On the y-axis
(B) In the fourth quadrant
(C) On the x-axis
(D) In the third quadrant

14. The ends of a diameter of a circle are known. The centre of the circle is:

(A) a quarter of the way along the diameter
(B) the mid-point of the diameter
(C) outside the circle
(D) one end of the diameter

15. A quadrilateral with exactly one pair of parallel sides is called a:

(A) rectangle
(B) trapezium
(C) parallelogram
(D) rhombus

16. Which of these points is nearest to the origin?

(A) (0, 2)
(B) (1, 1)
(C) (−1, −2)
(D) (−2, 0)

17. In a rectangle, the diagonals are:

(A) perpendicular and equal
(B) unequal and perpendicular
(C) equal and bisect each other
(D) unequal and bisect each other

18. Find the distance of the point (−8, 15) from the origin.

(A) 17
(B) 7
(C) 289
(D) 23

19. The ordinate of a point is its:

(A) x-coordinate
(B) y-coordinate
(C) distance from the origin
(D) angle with the axis

20. For three points, AB + BC > AC. What does this tell us?

(A) The points are the same
(B) The points lie on an axis
(C) The points are collinear
(D) The points are not collinear

21. Which condition, together with equal opposite sides, shows that a quadrilateral is a rectangle?

(A) Its diagonals are equal
(B) Its diagonals are perpendicular
(C) Its diagonals are unequal
(D) Two adjacent sides are equal

22. Find the mid-point of the line segment joining (−3, 4) and (5, −2).

(A) (−1, 1)
(B) (2, 2)
(C) (4, 3)
(D) (1, 1)

23. A quadrilateral whose opposite sides are parallel and equal is a:

(A) parallelogram
(B) trapezium
(C) kite
(D) triangle

24. Find the distance between (5, 3) and (−1, −5).

(A) 14
(B) 2
(C) 10
(D) 100

25. Two points have the same y-coordinate. The distance between them is:

(A) the absolute difference of their x-coordinates
(B) zero
(C) the difference of their y-coordinates
(D) the sum of their coordinates

Answer key

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1 D	**2** C	**3** A	**4** C	**5** C
6 D	**7** C	**8** A	**9** D	**10** D
11 B	**12** B	**13** A	**14** B	**15** B
16 B	**17** C	**18** A	**19** B	**20** D
21 A	**22** D	**23** A	**24** C	**25** A

Explanations

1. D. (2, −3)
In the fourth quadrant x is positive and y is negative.

2. C. Third
In quadrant III, $x < 0$ and $y < 0$.

3. A. I
$-x$ is positive when x is negative, so both coordinates are positive: quadrant I.

4. C. all four sides are equal
A quadrilateral with four equal sides is a rhombus.

5. C. 12
Sides: 3, 4 and $\sqrt{(9 + 16)} = 5$. Perimeter = 12.

6. D. the square of the longest side equals the sum of the squares of the other two
This is the converse of Pythagoras theorem.

7. C. (0, 0)
The axes meet at the origin, which is (0, 0).

8. A. 0
Points on the x-axis have $y = 0$.

9. D. Its y-coordinate is 0
Every point on the x-axis has the form (x, 0).

10. D. The y-axis
Its distance from the y-axis is 3, from the x-axis is 5, and from the origin is $\sqrt{34} \approx 5.8$.

11. B. its mid-point
A bisector cuts the segment into two equal parts, so it must pass through the mid-point.

12. B. (5, 7)
The centre is the mid-point: $((4 + 6)/2, (5 + 9)/2) = (5, 7)$.

13. A. On the y-axis
The x-coordinate is 0, so the point is on the y-axis.

14. B. the mid-point of the diameter
The centre lies halfway along any diameter.

15. B. trapezium
A trapezium has one pair of parallel sides.

16. **B. (1, 1)**
Distances: √2, 2, 2 and √5. The smallest is √2.

17. **C. equal and bisect each other**
The diagonals of a rectangle are equal and bisect each other.

18. **A. 17**
d = √(64 + 225) = √289 = 17.

19. **B. y-coordinate**
In (x, y), y is the ordinate.

20. **D. The points are not collinear**
Collinear points with B in the middle give AB + BC = AC exactly.

21. **A. Its diagonals are equal**
A parallelogram with equal diagonals is a rectangle.

22. **D. (1, 1)**
((−3 + 5)/2, (4 + (−2))/2) = (1, 1).

23. **A. parallelogram**
A parallelogram has both pairs of opposite sides parallel and equal.

24. **C. 10**
d = $\sqrt{((-1 - 5)^2 + (-5 - 3)^2)}$ = √(36 + 64) = 10.

25. **A. the absolute difference of their x-coordinates**
The points lie on a horizontal line, so only the x-coordinates differ.

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