ExamPath

CLASS 9 MATHEMATICS · FBISE · UNIT 7

Unit 7: Coordinate Geometry — Beginner Practice

15 multiple-choice questions Suggested time: **15 minutes** 1 mark each

Name: Date: Score: / 15

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. Why is d(A, B) equal to d(B, A)?

(A) Because b − a is always positive
(B) Because distance is measured from the origin
(C) Because a = b always
(D) Because |b − a| = |a − b|

2. The abscissa of a point is its:

(A) x-coordinate
(B) distance from the origin
(C) quadrant number
(D) y-coordinate

3. Find the distance between the points −3 and 5 on a number line.

(A) 15
(B) 8
(C) 2
(D) −8

4. The distance between two points with coordinates a and b on a number line is:

(A) a × b
(B) b − a only
(C) |b − a|
(D) b + a

5. Three points A, B and C are collinear with B between A and C. Which statement is true?

(A) $AB^2 + BC^2 = AC^2$
(B) AC = AB − BC
(C) AC = AB + BC
(D) AB = BC = AC

6. Find the mid-point of the line segment joining (4, 2) and (10, 8).

(A) (3, 3)
(B) (7, 5)
(C) (14, 10)
(D) (6, 3)

7. The mid-point of the line segment joining (x_1, y_1) and (x_2, y_2) is:

(A) $((x_1 + x_2)/2, (y_1 + y_2)/2)$
(B) $((x_1 - x_2)/2, (y_1 - y_2)/2)$
(C) $(x_1x_2/2, y_1y_2/2)$
(D) $(x_1 + x_2, y_1 + y_2)$

8. Can the distance between two points ever be negative?

(A) Yes, in the third quadrant
(B) Yes, when both coordinates are negative
(C) No, distance is never negative
(D) Yes, when b < a

9. Are the points (2, 3) and (3, 2) the same point?

(A) Yes, they use the same numbers
(B) Yes, they are the same distance from the origin
(C) Only if they are on the x-axis
(D) No, the order of an ordered pair cannot be changed

10. In which quadrant does the point (−3, 4) lie?

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

11. Which theorem is used to derive the distance formula?

(A) Pythagoras theorem
(B) Sine rule
(C) Remainder theorem
(D) Binomial theorem

12. If M is the mid-point of the line segment LN, then LM : MN is:

(A) 2 : 1
(B) 1 : 3
(C) 1 : 1
(D) 1 : 2

13. Find the distance between the points (0, 0) and (3, 4).

(A) 25
(B) 1
(C) 7
(D) 5

14. What is the y-coordinate of every point on the x-axis?

(A) 0
(B) x
(C) −1
(D) 1

15. Points that lie on the same straight line are called:

(A) non-collinear points
(B) collinear points
(C) coincident points
(D) concurrent lines

Answer key

Unit 7 · Beginner Practice

1 D	**2** A	**3** B	**4** C	**5** C
6 B	**7** A	**8** C	**9** D	**10** B
11 A	**12** C	**13** D	**14** A	**15** B

Explanations

1. D. Because |b − a| = |a − b|
Reversing the order only changes the sign inside the absolute value.

2. A. x-coordinate
In the ordered pair (x, y), x is the abscissa and y is the ordinate.

3. B. 8
|5 − (−3)| = |5 + 3| = 8.

4. C. |b − a|
Distance is the absolute value of the difference, so the order of a and b does not matter.

5. C. AC = AB + BC
When B lies on the line segment AC, the two parts add up to the whole.

6. B. (7, 5)
((4 + 10)/2, (2 + 8)/2) = (7, 5).

7. A. $((x_1 + x_2)/2, (y_1 + y_2)/2)$
Each coordinate of the mid-point is the average of the matching coordinates of the end points.

8. C. No, distance is never negative
Distance is an absolute value or a square root, so it is zero or positive.

9. D. No, the order of an ordered pair cannot be changed
(x, y) = (y, x) only when x = y. Here 2 ≠ 3, so they are different points.

10. B. Second quadrant
A negative x-coordinate and a positive y-coordinate place the point in quadrant II.

11. A. Pythagoras theorem
The horizontal and vertical differences form the two legs of a right-angled triangle.

12. C. 1 : 1
The mid-point splits a segment into two equal parts.

13. D. 5
$d = \sqrt{(3^2 + 4^2)} = \sqrt{25} = 5$.

14. A. 0
Points on the x-axis do not move up or down, so y = 0.

15. B. collinear points
Collinear points lie on one straight line.

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