Pakistan School
Kingdom of Bahrain

Welcome Class 10th (arts)

Introduction to coordinate geometry

Objectives

Students will be able to:

Use distance formula

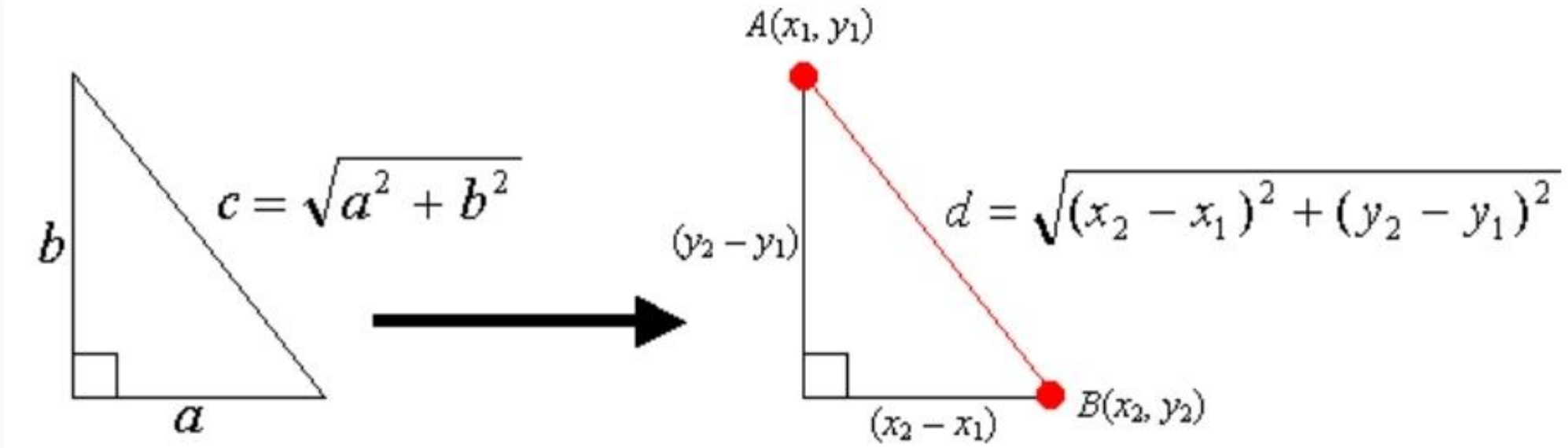
Distance formula

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

d = distance

(x_1, y_1) = coordinates of the first point

(x_2, y_2) = coordinates of the second point



$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

4- Show that the points A(5, 4), B(4, –3), C(–2,5) are equidistant from.

Solution: Here (A (5, 4), B(4, - 3), C (-2, 5), D(1, 1)

Now

$$|\overline{DA}| = \sqrt{(5-1)^2+(4-1)^2} = \sqrt{(4)^2+(3)^2}$$
$$= \sqrt{16+9} = \sqrt{25} = 5$$
$$|\overline{DB}| = \sqrt{(4-1)^2+(-3-1)^2} = \sqrt{(3)^2+(-4)^2}$$
$$= \sqrt{9+16} = \sqrt{25} = 5$$
$$|\overline{DC}| = \sqrt{(-2-1)^2+(5-1)^2} = \sqrt{(-3)^2+(4)^2}$$
$$= \sqrt{9+16} = \sqrt{25} = 5$$

As $|\overline{DA}| = |\overline{DB}| = |\overline{DC}| = 5$

Hence the points A (5, 4), B (4, - 3), C (-2, 5) are equidistant from D (1, 1).

I- Encircle the Correct Answer.

1. $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ is called

   (a) *distance formula* (b) *collinear points*

   (c) *non-collinear points* (d) *equal points*

2. A point in a cartesian plane determines a unique ordered pair of:

   (a) *set* (b) *abscissa* (c) *numbers* (d) *ordinate*

3. In the plane with every ordered pair is associated:

   (a) *a unique point* (b) *zero* (c) *two points* (d) *four points*

4. Points lying on the same line are called:

   (a) *non-collinear* (b) *collinear* (c) *equal* (d) *overlapping*

5. Points which do not lie on the same straight line are called:

   (a) *non-collinear* (b) *collinear* (c) *equal* (d) *zero*

6. Point on the axis do not lie in any:

(a) *a plane* (b) *line* (c) *quadrant* (d) *circle*

7. The co-ordinates of the origin are:

(a) *0* (b) *(1,0)* (c) *(0,0)* (d) *(0,1)*

8. Points on the negative x-axis have negative:

(a) *abscissa* (b) *ordinate* (c) *value* (d) *fraction*

9. A point in 4th quadrant has its ordinate:

(a) *positive* (b) *negative* (c) *zero* (d) *one*

10. A point in the first quadrant is characterized by the fact that both its co-ordinates are:

(a) *zero* (b) *positive*

(c) *negative* (d) *positive and negative oth*

Answers

1. $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ is called

   (a) *distance formula* (b) *collinear points*

   (c) *non-collinear points* (d) *equal points*

2. A point in a cartesian plane determines a unique ordered pair of:

   (a) *set* (b) *abscissa* (c) *numbers* (d) *ordinate*

3. In the plane with every ordered pair is associated:

   (a) *a unique point* (b) *zero* (c) *two points* (d) *four points*

4. Points lying on the same line are called:

   (a) *non-collinear* (b) *collinear* (c) *equal* (d) *overlapping*

5. Points which do not lie on the same straight line are called:

   (a) *non-collinear* (b) *collinear* (c) *equal* (d) *zero*

6. Point on the axis do not lie in any:

(a) *a plane* (b) *line* (c) *quadrant* (d) *circle*

7. The co-ordinates of the origin are:

(a) *0* (b) *(1,0)* (c) *(0,0)* (d) *(0,1)*

8. Points on the negative x-axis have negative:

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9. A point in 4th quadrant has its ordinate:

(a) *positive* (b) *negative* (c) *zero* (d) *one*

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(a) *zero* (b) *positive*

(c) *negative* (d) *positive and negative oth*

II- **Fill in the blanks.**

1. $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ is called _____
2. A point in a cartesian plane determines a _____ ordered pair of numbers.
3. With every ordered pair is associated a _____ point in the plane .
4. Points lying on the same line are called _____ points.
5. Points which do not lie on the same straight line are called _____ points.
6. Points on the axes do not lie in any _____.
7. The origin has the co-ordinates _____.
8. Points on the negative x-axis have negative abscissa and their ordinate is _____ .
9. A point in the 4th quadrant has its abscissa positive and its ordinate _____.
10. A point in the first quadrant is characterized by the fact, that both its co-ordinates are _____.

Answers

II- **Fill in the blanks.**

1- *Distance formula* **2-** *unique* **3-** *unique* **4-** *collinear* **5-** *non-collinear*

6- *quadrant* **7-** *(0,0)* **8-** *zero* **9-** *negative* **10-** *positive*

Homework

Ex 10.1 Q 3,5