Pakistan School
Kingdom of Bahrain

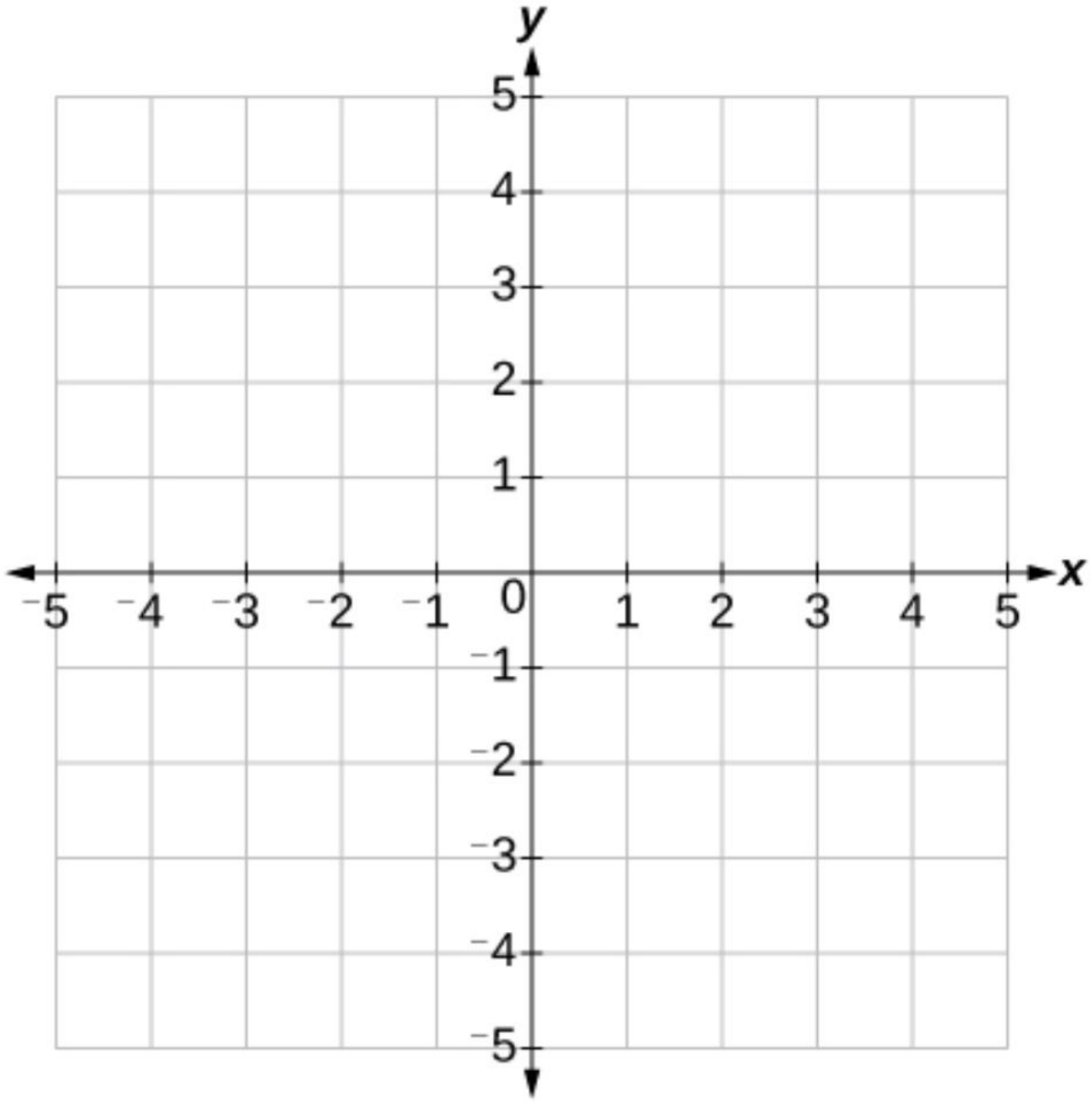
Welcome Class 10th (arts)

Introduction to coordinate geometry

Objectives

Students will be able to:

Use distance formula



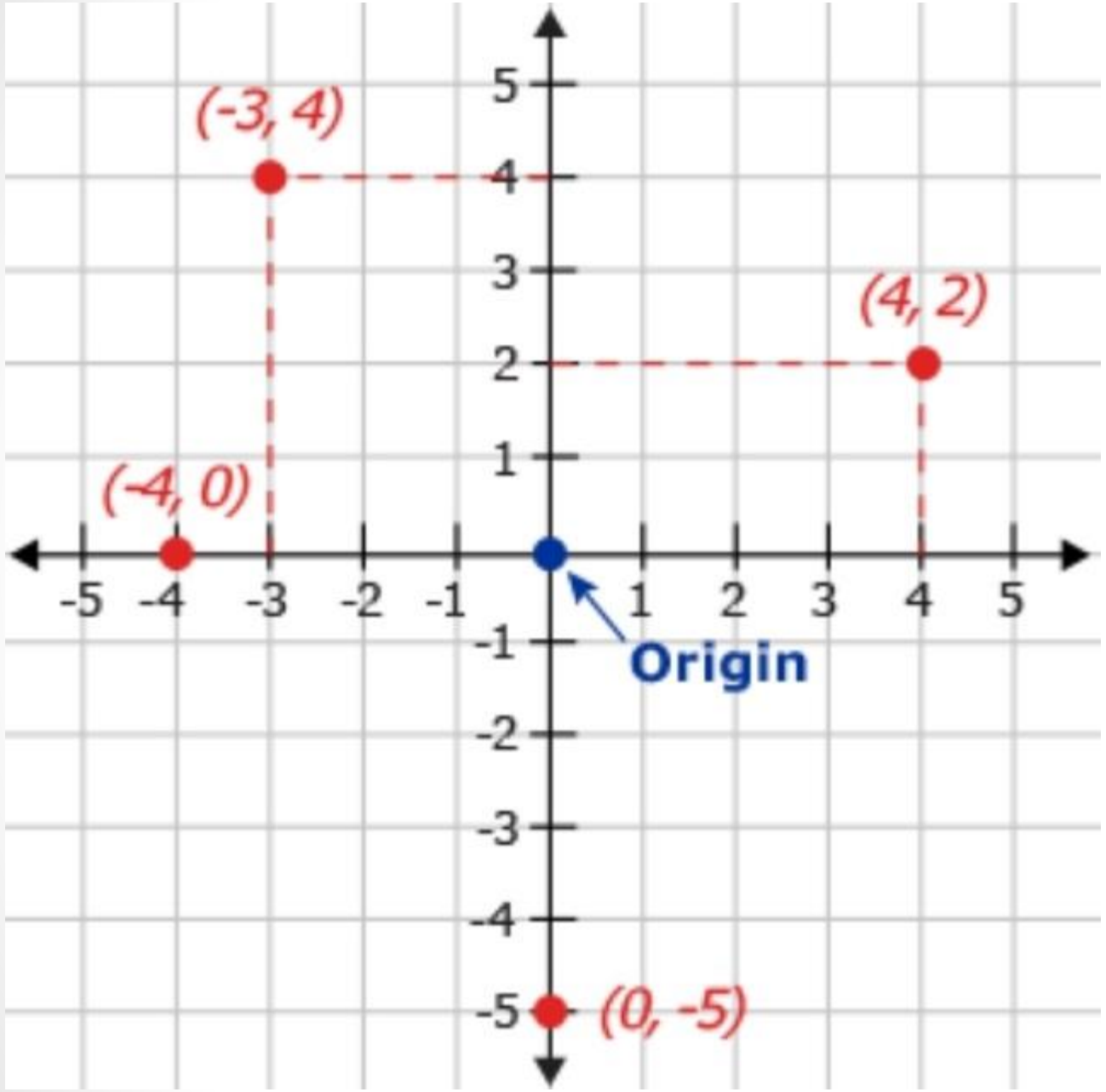
Find the following points on graph

i. $(-3,4)$

ii. $(-4,0)$

iii. $(0,-5)$

iv. $(4,2)$



i. $(-3,4)$
ii. $(-4,0)$
iii. $(0,-5)$
iv. $(4,2)$

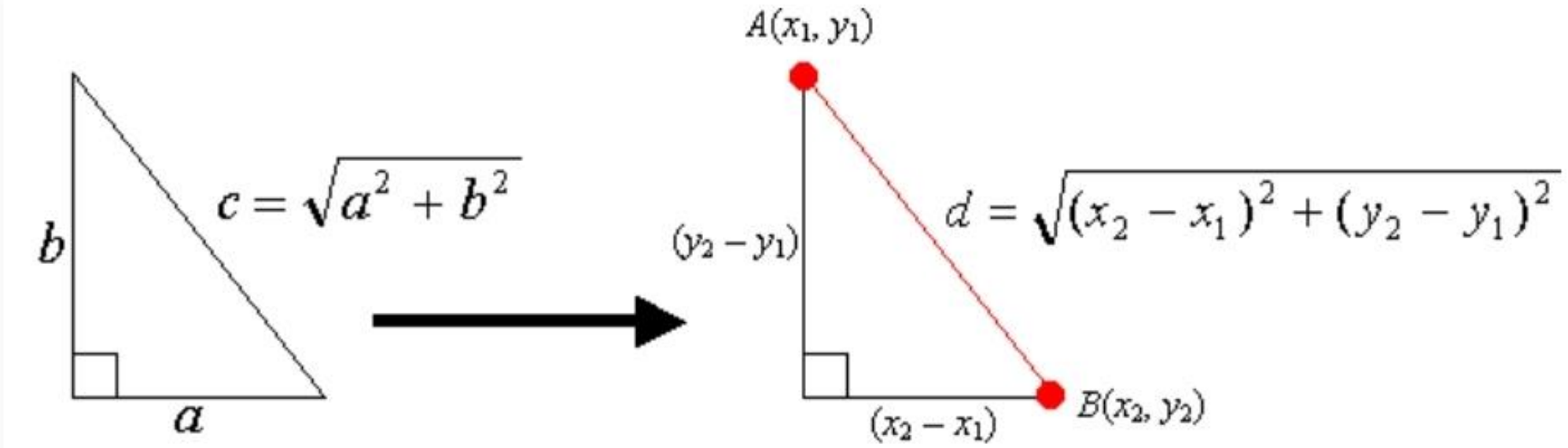
Distance formula

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

d = distance

(x_1, y_1) = coordinates of the first point

(x_2, y_2) = coordinates of the second point



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

2- Find the distance between the following pairs of points.

i. $(2, 1), (-4, 3)$

ii. $(7-2), (-2,3)$

Let $(2, 1), (-4, 3)$

$$|\overline{AB}| = \sqrt{(-4-2)^2+(3-1)^2}$$
$$= \sqrt{(-6)^2+(2)^2}$$
$$= \sqrt{36+4} = \sqrt{40}$$
$$= \sqrt{2\times 2\times 10} = 2\sqrt{10}$$

Let $(7-2), (-2, 3)$

$$|\overline{AB}| = \sqrt{(-2-7)^2+[3-(-2)]^2}$$
$$= \sqrt{(-2-7)^2+(3+2)^2}$$
$$= \sqrt{(-9)^2+(5)^2}$$
$$= \sqrt{81+25} = \sqrt{100}$$

Activity

Q. Find the distance between following points $(-1, -3), (-2, -1)$

Solution

Let $(-1,3), (-2,-1)$

$$|\overline{AB}| = \sqrt{\left[-2-(-1)\right]^2+(-1-3)^2}$$

$$= \sqrt{(-2+1)^2+(-1-3)^2}$$

$$= \sqrt{(-1)^2+(-4)^2}$$

$$= \sqrt{41+16} = \sqrt{17}$$

Homework

Ex 10.1 Q1