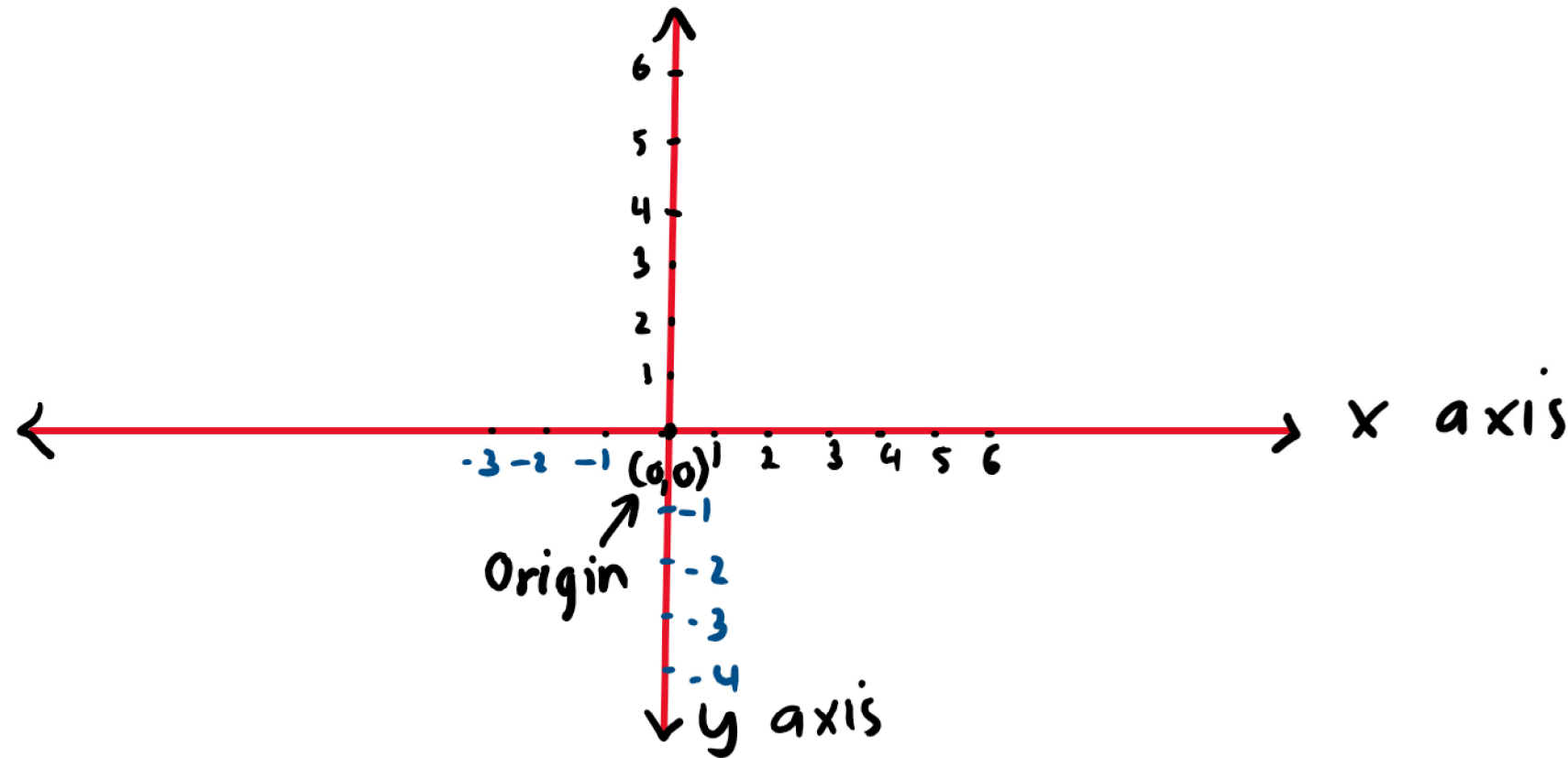


Grid \rightarrow Two axis
 $\left\{ \begin{array}{l} \text{x axis - horizontal} \leftarrow \rightarrow \text{x} \\ \text{y axis - vertical (y to the sky)} \updownarrow \text{y} \end{array} \right.$



A point (x value, y value) \Rightarrow (x, y)

- 1) $\leftarrow \rightarrow$ out left or right to the x value.
- 2) \updownarrow up or down on the y axis to find the y value.

A point can be called a **couple** (x, y) ^{functions}

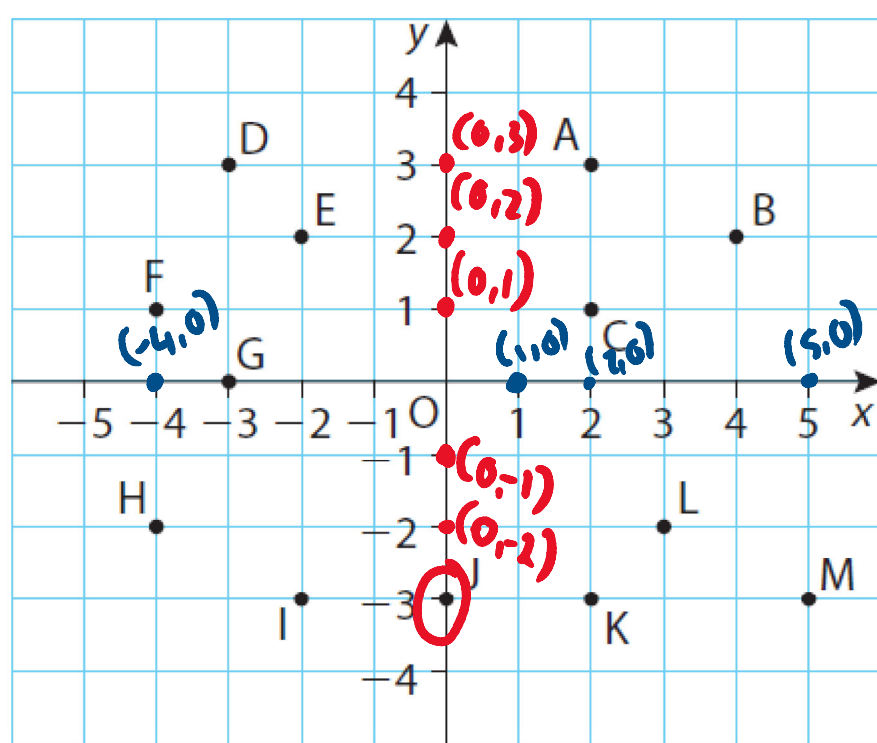
Chapter 14

Coordinate Geometry – The Line

Section 14.1 The coordinated plane

Exercise 14.1

1. Write down the coordinates of each of the points marked in the coordinated plane on the right:



$$I = (-2, -3) \quad K = (2, -3)$$

$$J = (0, -3) \quad L = (3, -2)$$

$$M = (5, -3)$$

Point (x, y)

$$A = (2, 3)$$

$$B = (4, 2)$$

$$C = (2, 1)$$

$$D = (-3, 3)$$

$$E = (-2, 2)$$

$$F = (-4, 1)$$

$$G = (-3, 0)$$

$$H = (-4, -2)$$

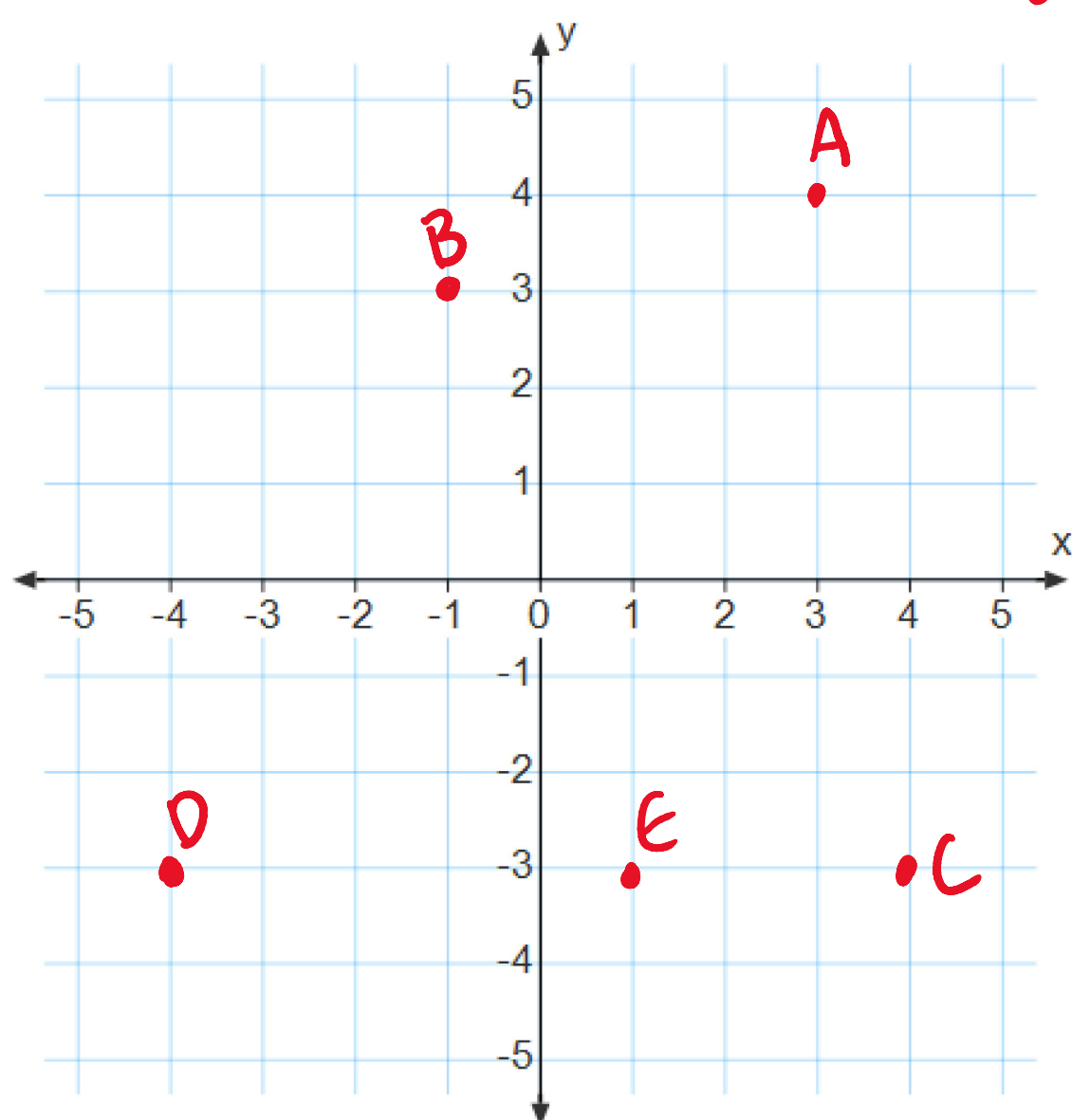
NOTE:

1) All the x values on the y axis are 0.
 $x=0$ on the y axis
 so and point $(0, y)$

2) On the x axis \longleftrightarrow
 $y=0$
 Any point on the x axis
 $(x, 0)$

2. Draw a grid similar to that shown above and mark in the following points:

- (i) $A(3, 4)$ (ii) $B(-1, 3)$ (iii) $C(4, -3)$ (iv) $D(-4, -3)$ (v) $E(1, -3)$

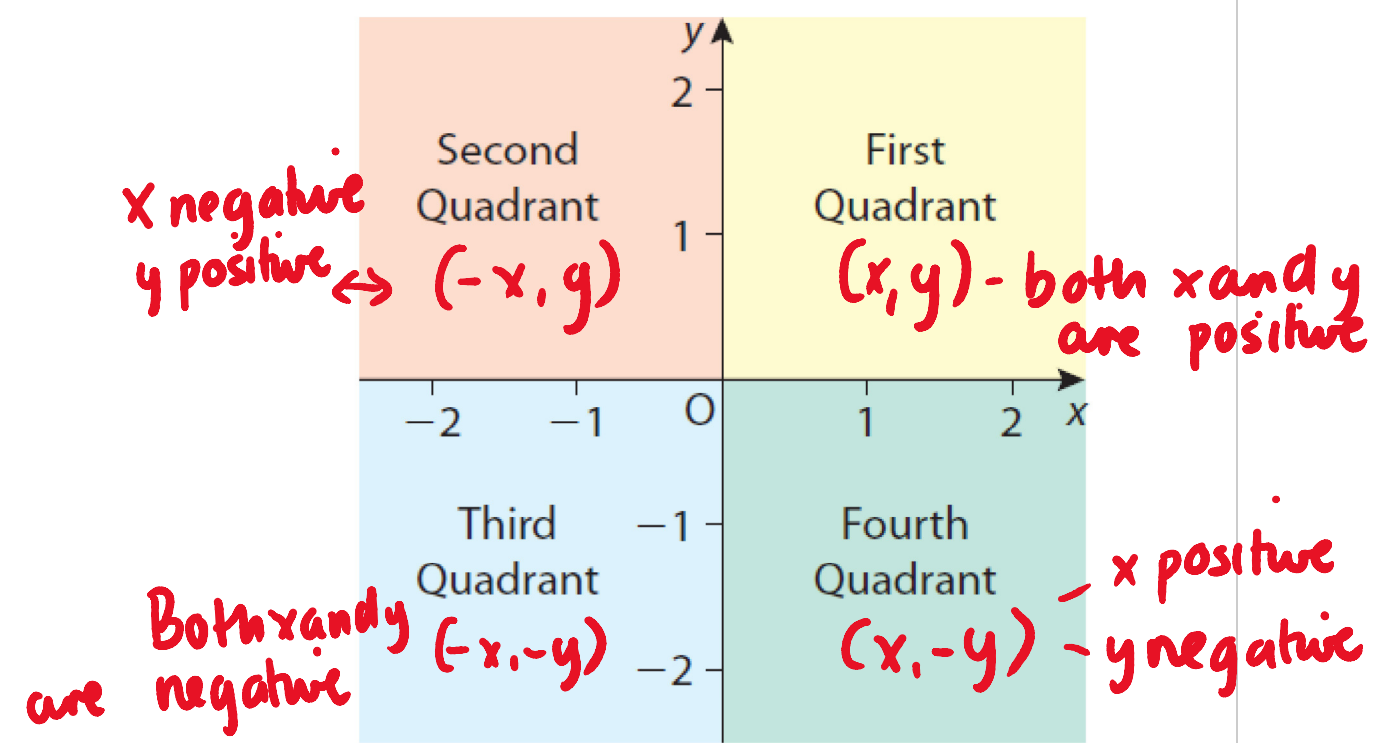


3. The four quadrants are shown on the right.

In which quadrant does each of the following points lie?

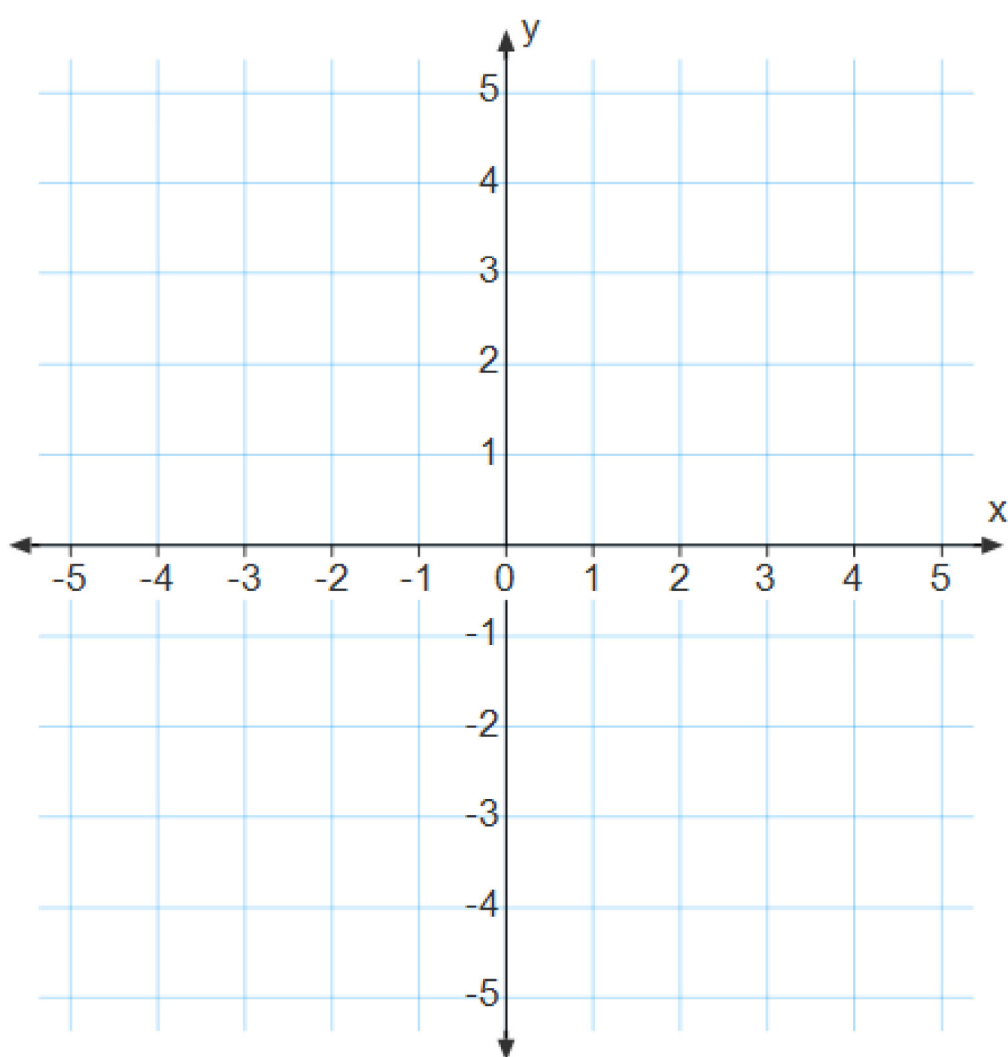
- (i) (3, 5)
- (ii) (-2, -3)
- (iii) (1, -4)
- (iv) (-3, 1)
- (v) (3, -3)
- (vi) (-1, -3).

Quadrants - Notes.



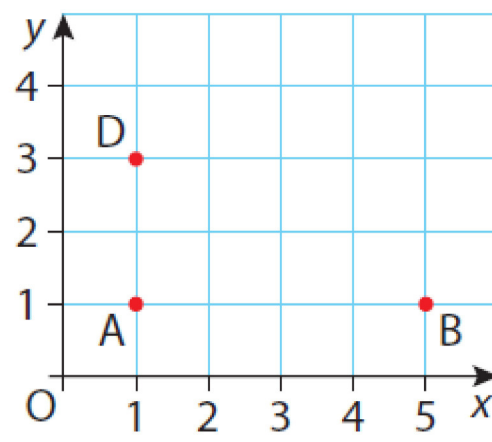
4. On which axis does each of these points lie?

- (i) A(4, 0)
- (ii) B(0, 2)
- (iii) C(0, -3)
- (iv) D(-4, 0)
- (v) E(-1, 0)



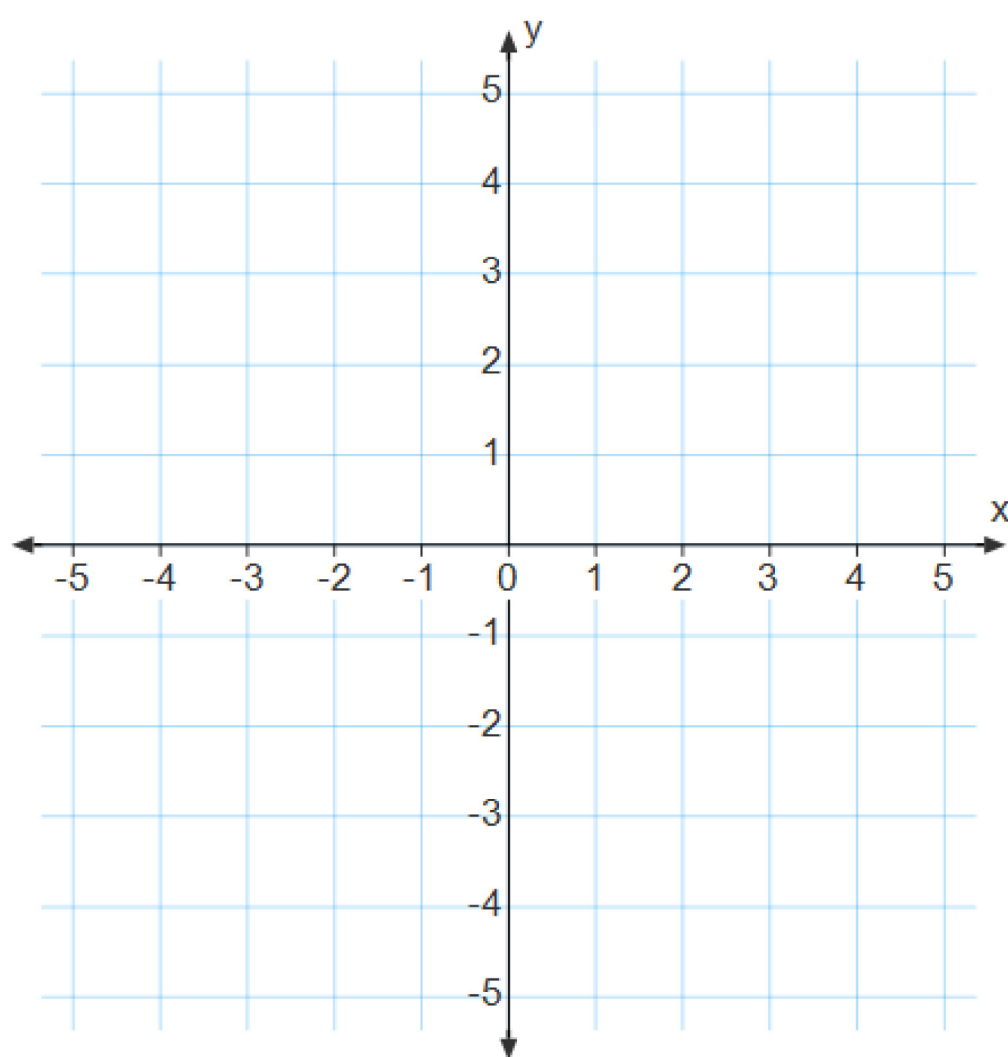
5. Write down the coordinates of the points A, B and D on the given grid.

If ABCD is a rectangle, write down the coordinates of the point C.



6. Draw an x-axis and y-axis from 0 to 5.

- (i) Plot the points $(2, 1)$, $(5, 1)$ and $(5, 4)$. These are three corners of a square.
(ii) What are the coordinates of the fourth corner of the square?



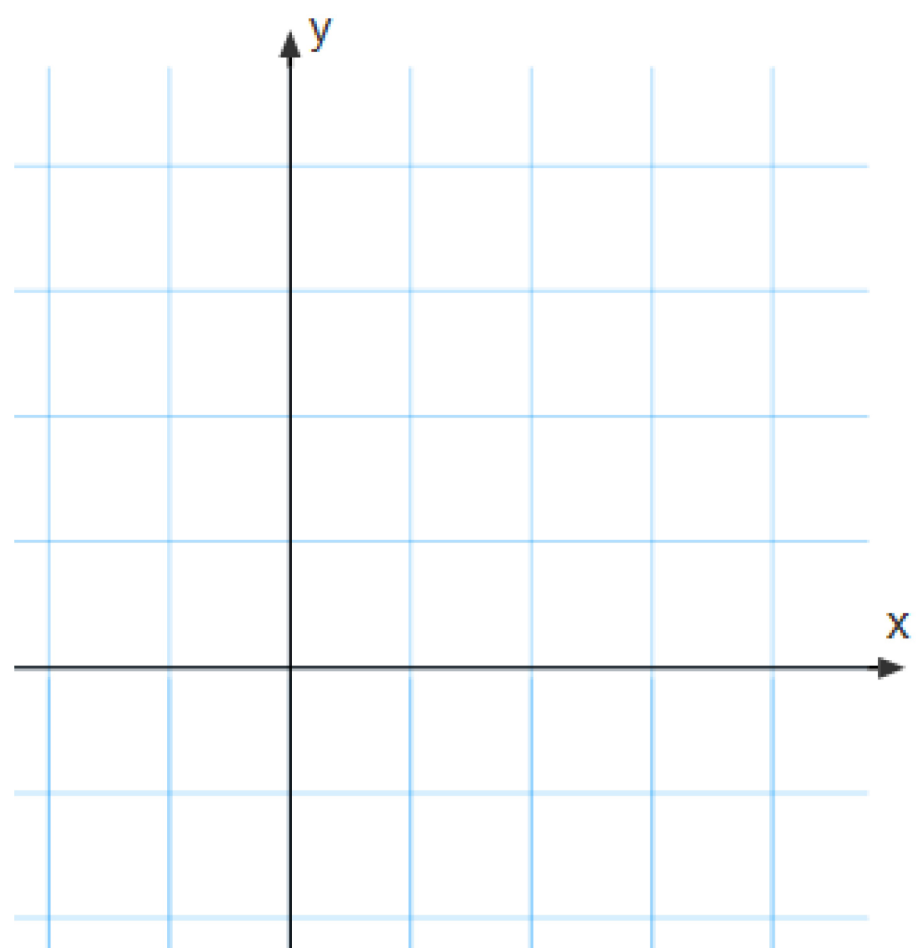
7. Draw an x -axis and y -axis from -2 to 4 .

(i) Plot the points $A(3, 2)$, $B(3, -1)$ and $C(-1, -1)$.

(ii) Points A , B and C are three corners of a rectangle.

Point D is the fourth corner of the rectangle. Plot point D on your diagram.

(iii) What are the coordinates of point D ?



8. (i) Plot these points on a number plane:

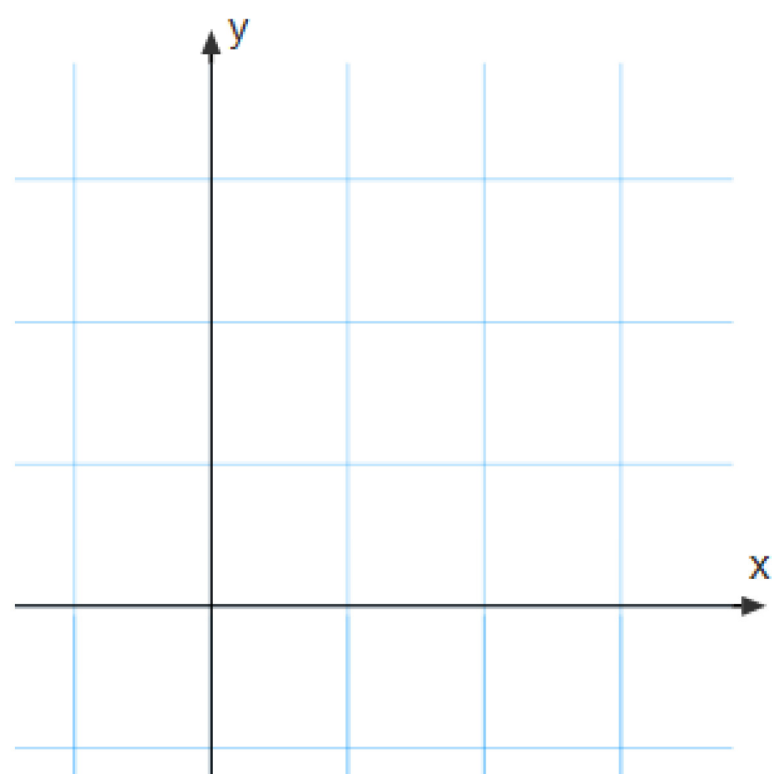
$(1, -1)$, $(1, 3)$, $(3, 3)$, $(3, -1)$.

(ii) By joining the points in order and then back to the first point again, what type of figure is formed?

(iii) What are the lengths of the sides of this figure?

(iv) What is its perimeter?

(v) What is its area?



9. This triangle has been formed by joining the points shown.

- (i) What is the height h of this triangle?
- (ii) What is the length of the base b ?
- (iii) Work out the area of this triangle?

