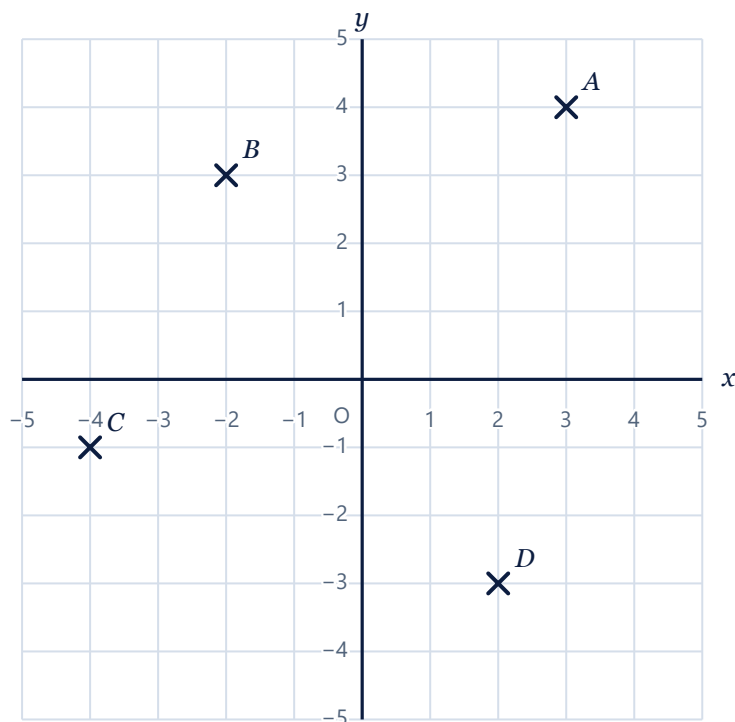




1 The points A, B, C and D are shown on the grid.

- Write down the coordinates of A and B.
- Write down the coordinates of C and D.



(2 marks)

a)

across first, then up or down

A: 3 right, 4 up

A (3, 4)

B: 2 left, 3 up

B (-2, 3)

b)

C: 4 left, 1 down

C (-4, -1)

D: 2 right, 3 down

D (2, -3)

2

O is the origin of a coordinate grid.

The point A is 4 units to the right of O and 2 units up from O.

The point B is 3 units to the left of O and 5 units up from O.

a. Write down the coordinates of A.

b. Write down the coordinates of B.

(2 marks)

Right is the positive x direction and up is the positive y direction

A is 4 right and 2 up, so A is $(4, 2)$

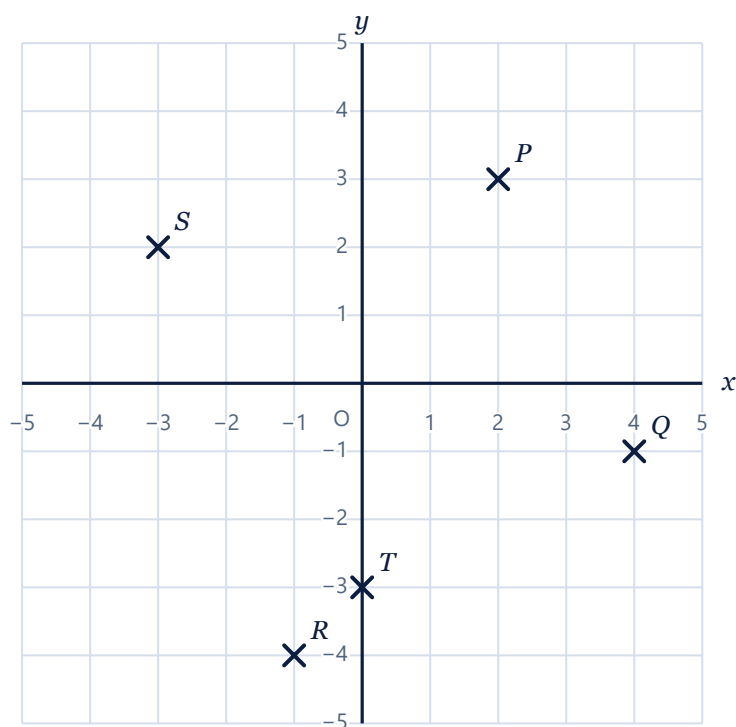
B is 3 left and 5 up, so B is $(-3, 5)$

3

Five points P, Q, R, S and T are marked on the grid.

Write down the letter of the point with coordinates

- a. $(-3, 2)$
- b. $(4, -1)$
- c. $(0, -3)$



(3 marks)

a)

3 left, 2 up

S

b)

4 right, 1 down

Q

c)

0 across, 3 down (on the y-axis)

T

4

Here are five points.

A (0, 5) B (-3, -2) C (4, 0) D (-1, 6) E (2, -7)

- Which point lies on the x-axis?
- Which point lies on the y-axis?
- Which point is below the x-axis and to the left of the y-axis?

(3 marks)

a)

on the x-axis, $y = 0$

C (4, 0)

b)

on the y-axis, $x = 0$

A (0, 5)

c)

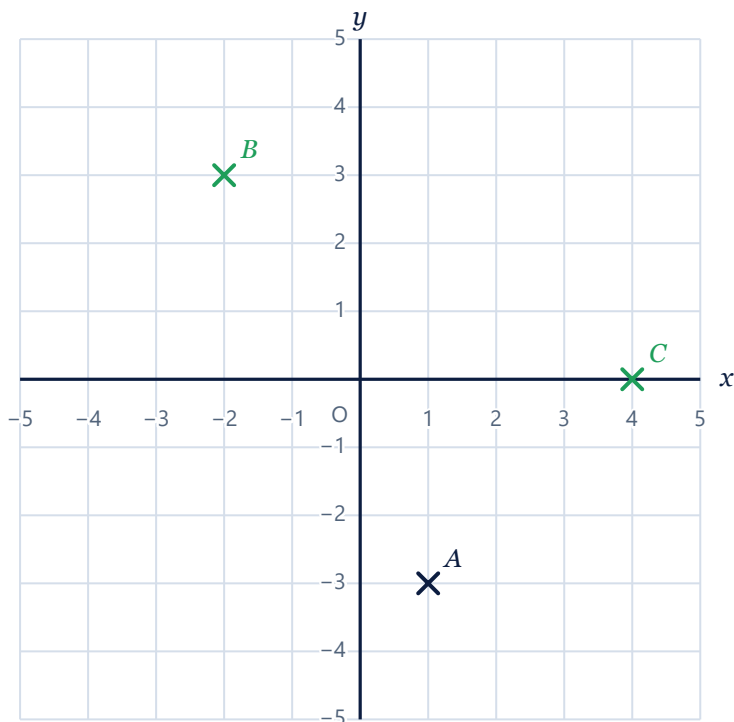
left: x negative, below: y negative

B (-3, -2)

5

The point A is shown on the grid.

- Write down the coordinates of A.
- On the grid, plot the point B with coordinates $(-2, 3)$.
- On the grid, plot the point C with coordinates $(4, 0)$.



(3 marks)

A is 1 unit right of the origin and 3 units down, so A is $(1, -3)$

For B, go 2 left and 3 up from the origin, then mark the point

For C, go 4 right along the x-axis; the y coordinate is 0, so C sits on the x-axis

6

A is the point with coordinates (2, 4).

B is the point with coordinates (8, 10).

Work out the coordinates of the midpoint of AB.

(2 marks)

Halfway between two values is their average: start at one value and add half the difference. Do this separately for the horizontal and vertical positions

The midpoint has the mean of the x coordinates and the mean of the y coordinates

x coordinate

$$(2 + 8) \div 2 = 5$$

y coordinate

$$(4 + 10) \div 2 = 7$$

The midpoint is (5, 7)

(5, 7)

7

C is the point with coordinates (-6, 2).

D is the point with coordinates (4, -8).

Work out the coordinates of the midpoint of CD.

(3 marks)

x coordinate of the midpoint

$$(-6 + 4) \div 2 =$$

y coordinate of the midpoint

$$(2 + (-8)) \div 2 =$$

The midpoint is (-1, -3)

(-1, -3)

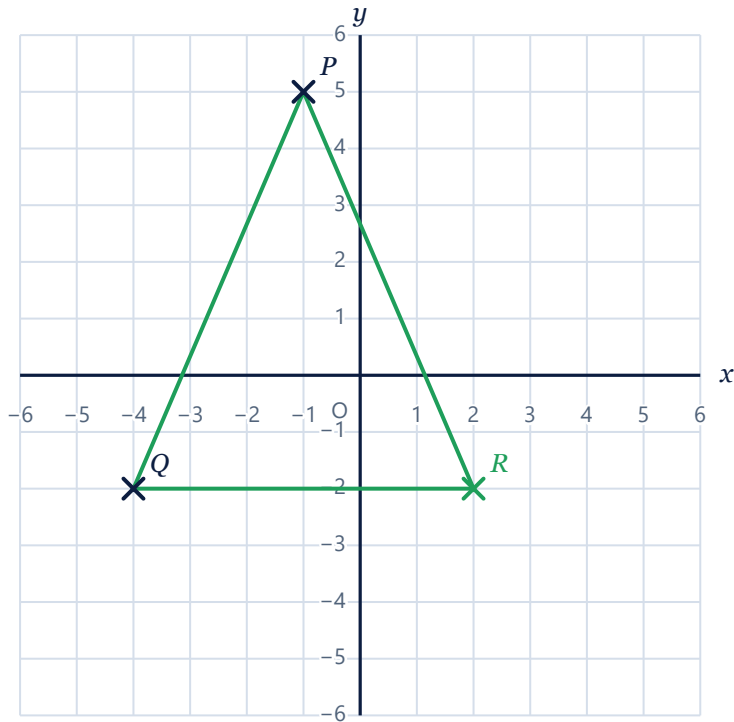
8

PQR is an isosceles triangle with $PQ = PR$.

P is the point $(-1, 5)$ and Q is the point $(-4, -2)$.

The side QR is horizontal.

Work out the coordinates of R.



(2 marks)

QR horizontal, so R has $y = -2$

P is above the middle of QR

Q to P across: -4 to -1 is 3 right

P to R across: 3 more right

$x =$

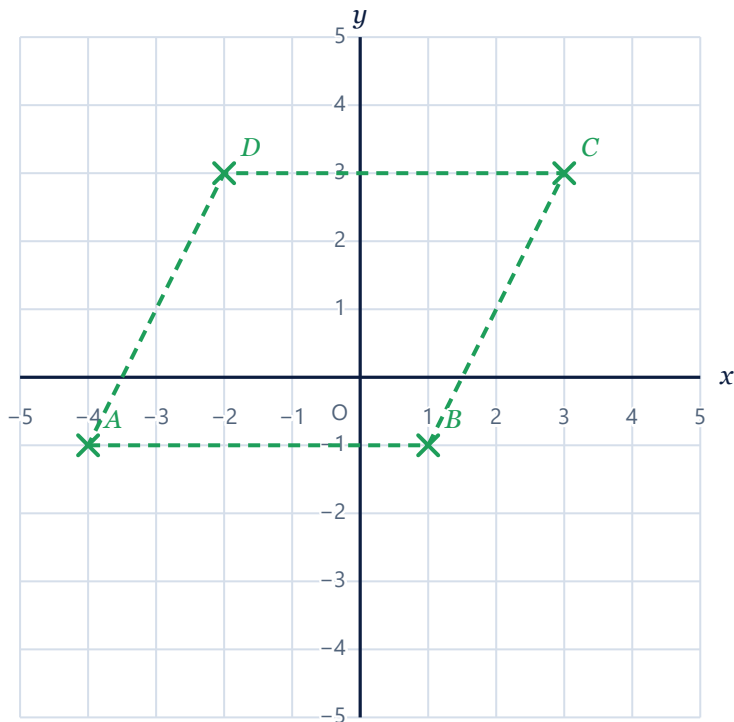
$R(2, -2)$

9

A, B and C are three vertices of a parallelogram ABCD.

A is $(-4, -1)$, B is $(1, -1)$ and C is $(3, 3)$.

- On the grid, plot the points A, B and C.
- Work out the coordinates of D.



(3 marks)

a)

plot A, B and C

b)

DC is parallel to AB and the same length

A to B: 5 right, 0 up

so D to C: 5 right, 0 up

$$D = (3 - 5, 3 - 0)$$

$$D(-2, 3)$$

10

A is the point with coordinates (1, 3).

M is the point with coordinates (4, 5).

M is the midpoint of the line segment AB.

Find the coordinates of the point B.

(3 marks)

From A to M you go 3 right (1 to 4) and 2 up (3 to 5)

M is the midpoint, so go the same again from M to reach B

B is $(4 + 3, 5 + 2) = (7, 7)$

$(7, 7)$

11

A treasure map is drawn on a coordinate grid.

The old oak tree is at $(-6, 3)$. The well is at $(2, -5)$.

The treasure is buried exactly halfway between the oak tree and the well.

a. Work out the coordinates of the treasure.

b. Tom starts at the oak tree. He walks 4 units right and then 7 units down. Is Tom standing on the treasure? You must show how you get your answer.

(3 marks)

a)

add the coordinates, then halve

$$x: (-6 + 2) \div 2 = -4 \div 2 = -2$$

$$y: (3 + -5) \div 2 = -2 \div 2 = -1$$

$(-2, -1)$

b)

$$x: -6 + 4 = -2$$

$$y: 3 - 7 = -4$$

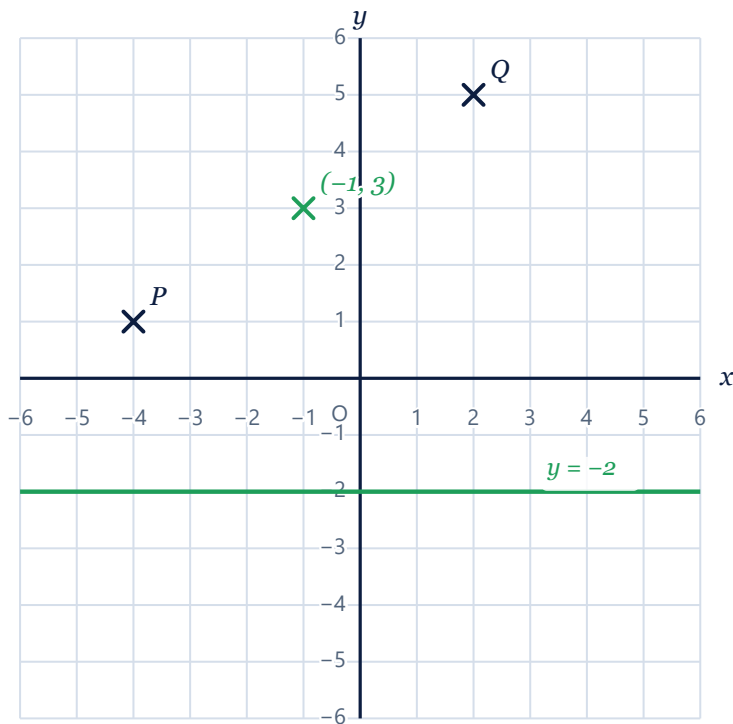
Tom is at $(-2, -4)$

No, $(-2, -4)$ is not $(-2, -1)$

12

The points P and Q are shown on the grid.

- Write down the coordinates of P.
- Write down the coordinates of Q.
- Work out the coordinates of the midpoint of PQ.
- On the grid, draw the line $y = -2$.



(4 marks)

Read the marked points from the grid: P is $(-4, 1)$ and Q is $(2, 5)$

Midpoint of PQ

$$x \text{ coordinate } (-4 + 2) \div 2 =$$

The line $y = -2$ is the horizontal line through every point with y coordinate -2