COORDINATES IN ALL FOUR QUADRANTS

BUILDING BLOCKS

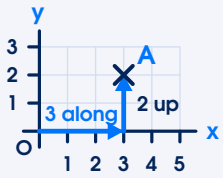
NAME _____ CLASS _____ DATE _____

KEY IDEA

Coordinates tell you where a point is.

go ALONG → then go UP

A (3 , 2)
along up

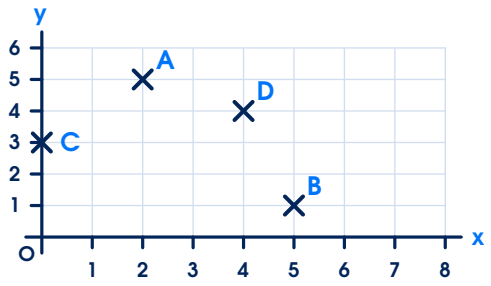


1 Write the coordinates of each point.

A (,) B (,)

C (,) D (,)

along → then up ↑

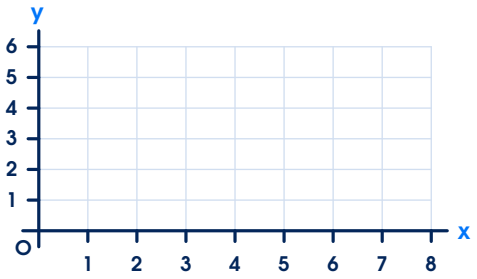


2 Mark each point with a cross and label it with the corresponding letter.

E (1, 2) F (6, 3)

G (3, 0) H (5, 6)

Count along, then up.



3 a) Fill in the missing numbers on the number line.

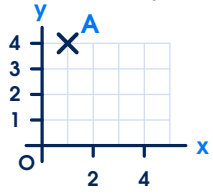
← smaller bigger →



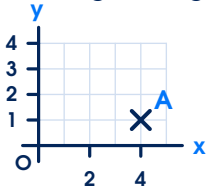
State the number that you end at if you:

b) start at 0 and move 4 left ☐ **c)** start at 2 and move 5 left ☐

4 Ali wants to plot the point A (4, 1). Which grid is right?



Grid 1 ☐



Grid 2 ☐

Tick the correct grid.

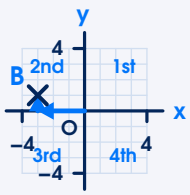
COORDINATES IN ALL FOUR QUADRANTS

SUPPORT

NAME _____ CLASS _____ DATE _____

KEY IDEA

The axes cross at the origin (0, 0).
They split the grid into four quadrants.
Negative x → go LEFT. Negative y → go DOWN.
B (–3, 1) is 3 left, then 1 up.

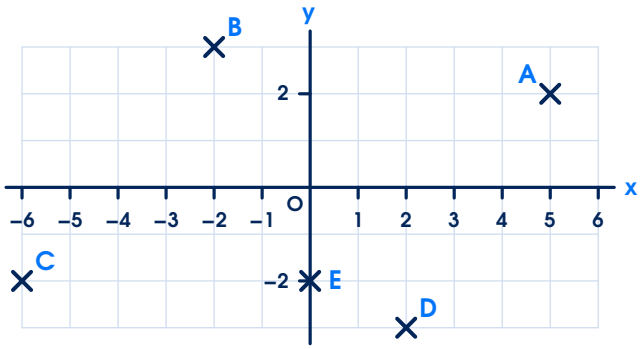


1 Write the coordinates of each point.

A (,) B (,)

C (,) D (,)

E (,)

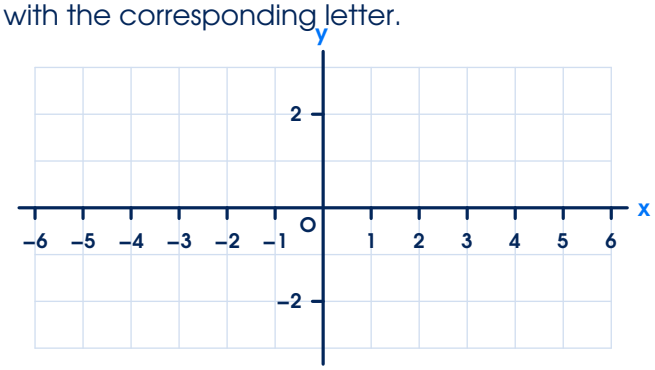


2 Mark each point with a cross and label it with the corresponding letter.

P (4, –3) **Q (–5, 1)**

R (–1, –2) **S (0, 3)**

T (6, 0)



3 a) Write the coordinates you reach from (0, 0).

Example: 2 right, 5 up → (2, 5)

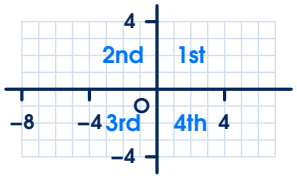
4 left, 1 up → (,) **3 right, 2 down →** (,)

b) Which move takes you to the point (–1, 4)? .....

4 Which quadrant is each point in?

(5, 2) _____ **(–3, –6)** _____

(–7, 1) _____ **(4, –8)** _____



COORDINATES IN ALL FOUR QUADRANTS

CORE

NAME _____ CLASS _____ DATE _____

KEY IDEA

(x, y): x gives the horizontal position, y the vertical position. Always check the scale.

FLUENCY

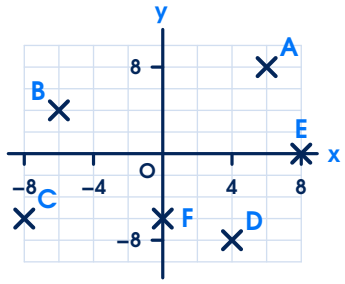
1 Write the coordinates of each point.

Each square on this grid is worth 2.

A (,) B (,)

C (,) D (,)

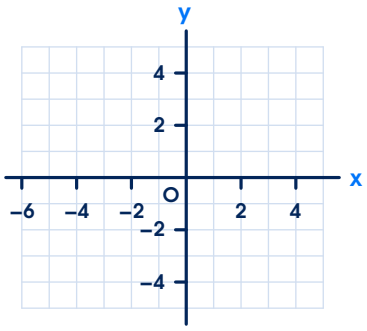
E (,) F (,)



2 a) Plot these points on the grid and label them.

G (−5, 2) **H (3, −5)** **J (−1, 4)**

K (5, −1) **M (0, −4)**



b) Name the two points in the 4th quadrant. _____

c) Which point lies on an axis? _____

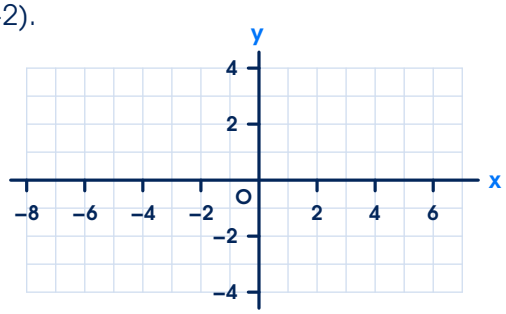
REASONING

3 Three corners of a square are (−3, 2), (1, 2) and (1, −2).

a) Plot the three corners on the grid.

b) The fourth corner is (,)

c) The centre of the square is (,)



4 Amir says, "(0, 5) and (5, 0) are the same point because they use the same numbers." Explain why Amir is wrong.

.....

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COORDINATES IN ALL FOUR QUADRANTS

GREATER DEPTH

NAME _____ CLASS _____ DATE _____

REASONING

1 Is each statement always, sometimes or never true? Circle your answer.

If it is sometimes true, give an example of when it is true and when it is not.

a) A point with a negative x-coordinate is in the 2nd quadrant. ALWAYS SOMETIMES NEVER

b) A point on the x-axis has a y-coordinate of 0. ALWAYS SOMETIMES NEVER

c) The points (a, b) and (b, a) are in the same quadrant. ALWAYS SOMETIMES NEVER

d) The point (–3, k) is to the left of the y-axis. ALWAYS SOMETIMES NEVER

PROBLEM SOLVING

2 ABCD is a rectangle with sides parallel to the axes. A is (–4, 3) and the opposite corner C is (2, –1).

a) Find B and D. (,) **b)** Find the perimeter.

3 Two corners of an isosceles triangle are (–2, –1) and (4, –1). The two equal sides meet at the third corner.

a) Give three different points that could be the third corner.

(,) (,) (,)

b) The area is 12 square units. Find both third corners. (,) (,)

★ CHALLENGE FOR ALL

4 The point (a, b) is in the 2nd quadrant. Which quadrant is each of these points in?

a) **(b, a)** _____ quadrant **b)** **(–a, b)** _____ quadrant

c) **(a, –b)** _____ quadrant **d)** **(–b, –a)** _____ quadrant

COORDINATES IN ALL FOUR QUADRANTS

ANSWERS

BUILDING BLOCKS

1 A (2, 5) · B (5, 1) · C (0, 3) · D (4, 4)
2 E 1 along, 2 up · F 6 along, 3 up · G 3 along, 0 up (on the x-axis) · H 5 along, 6 up
3 a) –4, –2, –1, 1, 3, 4 · b) –4 · c) –3
4 Grid 2. (Grid 1 shows (1, 4): the numbers are the wrong way round.)

SUPPORT

1 A (5, 2) · B (–2, 3) · C (–6, –2) · D (2, –3) · E (0, –2)
2 P 4 right, 3 down · Q 5 left, 1 up · R 1 left, 2 down · S on the y-axis at 3 · T on the x-axis at 6
3 a) (–4, 1) · (3, –2) · b) 1 left, 4 up
4 (5, 2) 1st · (–3, –6) 3rd · (–7, 1) 2nd · (4, –8) 4th

CORE

1 A (6, 8) · B (–6, 4) · C (–8, –6) · D (4, –8) · E (8, 0) · F (0, –6)
2 a) Points plotted correctly · b) H and K · c) M (0, –4), on the y-axis
3 a) Plotted · b) (–3, –2) · c) (–1, 0)
4 The first number is the x-coordinate. (0, 5) is on the y-axis, 5 up from the origin; (5, 0) is on the x-axis, 5 to the right. They are different points.

GREATER DEPTH

1 a) Sometimes: (–2, 3) is in the 2nd quadrant but (–2, –3) is in the 3rd. b) Always. c) Sometimes: (2, 3) and (3, 2) are both in the 1st, but (2, –3) is in the 4th and (–3, 2) is in the 2nd. d) Always.
2 a) B (2, 3) and D (–4, –1) (or the other way round) · b) 6 + 4 + 6 + 4 = 20 units
3 a) Any three points (1, k) with $k \neq -1$, e.g. (1, 2), (1, 4), (1, –3) · b) Base 6, so height 4: (1, 3) and (1, –5)
4 a is negative and b is positive. a) 4th · b) 1st · c) 3rd · d) 2nd