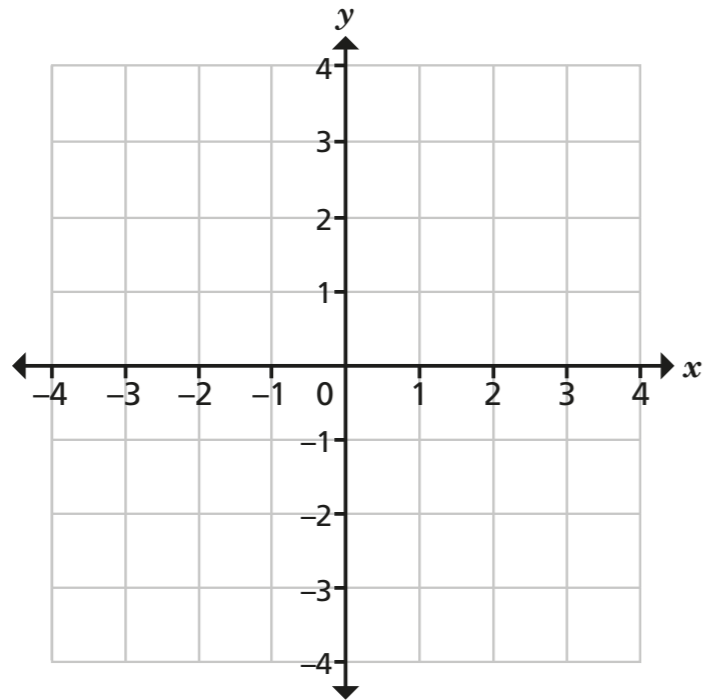# Lines parallel to the axis, $y = x$ and $y = -x$

R

1 Here is a blank coordinate grid.

a) Plot these points and draw lines to join them.

$(2, -3)$, $(0, -3)$, $(-1, -3)$, $(-3.5, -3)$

b) Complete the sentences.

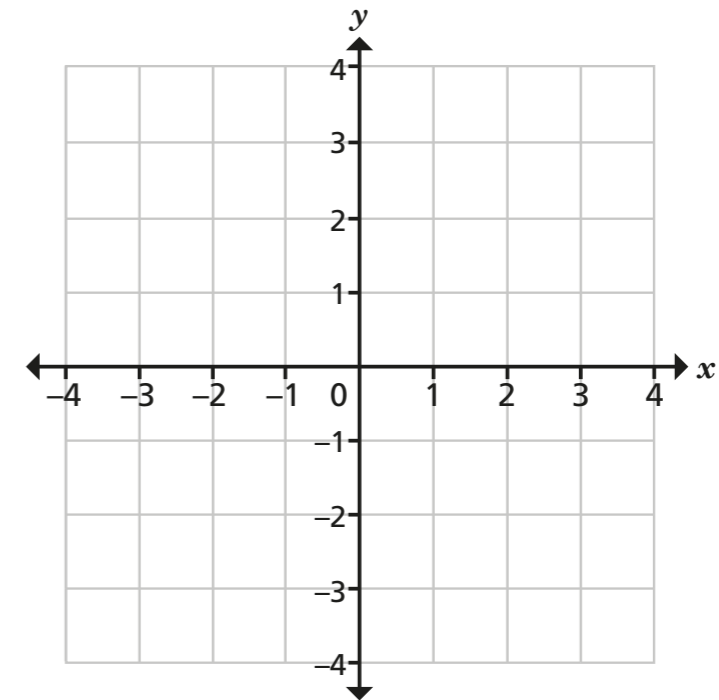All of the y-coordinates are [ ]

They join to make the line $y =$ [ ]

c) Write the coordinates of three points that lie on the line $y = 8$

([ ] , [ ])   ([ ] , [ ])   ([ ] , [ ])

2 Which of these lines are parallel to the x-axis? Tick your answers.

$x = 0$ [ ] $6 = y$ [ ] $6y = 2$ [ ] $3y + 8 = 0$ [ ]

3 Here is a blank coordinate grid.

a) Draw the line $x = 2$ on the grid.

b) Write the coordinates of three points that lie on your line.

_____

How do these tell you that your line is correct?

_____

c) Write the coordinates of a point on the line $x = 2$ that you cannot see on the grid.   ([ ] , [ ])

d) Draw the line $y = 1$ on the same grid.

e) Write the coordinates of the point where the lines $x = 2$ and $y = 1$ intersect.   ([ ] , [ ])

4 The point $(-5, 9)$ lies on which of these lines? Tick your answers.
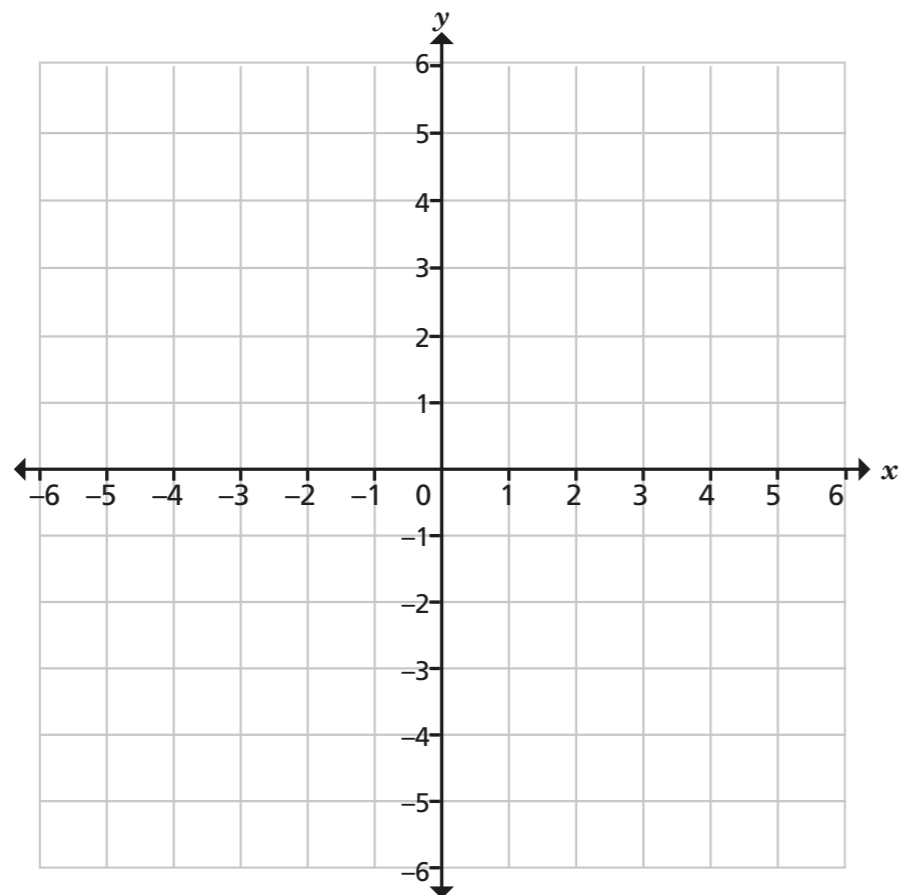
$y = -5$ [ ] $x = -5$ [ ] $x = 9$ [ ] $y = 9$ [ ]

5 Here is the table for values of $y = -x$.

x	−3	−2	−1	0	1	2	3
y	3		1	0	−1		

a) Complete the table.

b) Plot the graph of $y = -x$ on the coordinate grid.

c) Plot the graph of $y = x$ on the same grid.

d) What is the same and what is different about the lines $y = -x$ and $y = x$?

_____

_____

6 Are these statements always true, sometimes true or never true?

Give a reason for your answer.

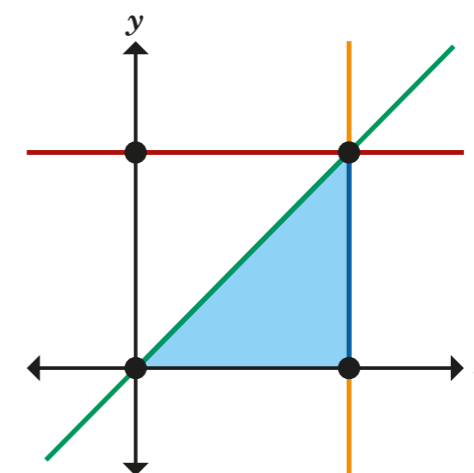**a)** The line $y = x$ is the same as the line $x = y$.

_____

_____

b) The line $y = x$ is at 45° to the x-axis.

_____

_____

c) The line $y = x$ passes through the 4th quadrant.

_____

_____

7 Tick the coordinates that lie on the line $y = x$.

(5.6, 5.6) ☐ $(3a, a + 2a)$ ☐

$(120, 60^2)$ ☐ $(0.3, \frac{1}{3})$ ☐

8 The lines $y = x$ and $x = a$ enclose a triangle with the x- and y-axes.

Write a formula for the area of the triangle.

_____