Compare gradients

1 **a)** Complete the tables of values for the four lines: P, Q, R and S.

P $y = x$

x	–2	–1	0	1	2
y					

R $y = 3x$

x	–2	–1	0	1	2
y					

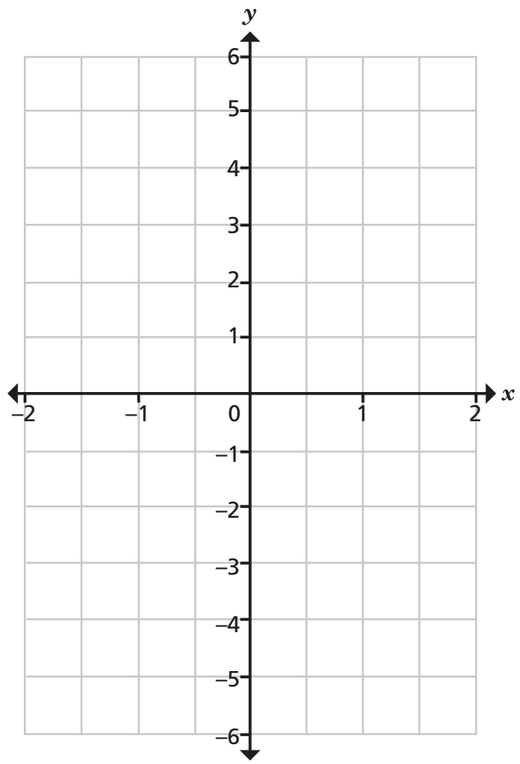
Q $y = 2x$

x	–2	–1	0	1	2
y					

S $y = \frac{1}{2}x$

x	–2	–1	0	1	2
y					

b) Plot and label the lines P, Q, R and S.



c) What do you notice?

2 **a)** Complete the tables of values for the four lines: J, K, L and M.

J $y = -x$

x	–2	–1	0	1	2
y					

L $y = -3x$

x	–2	–1	0	1	2
y					

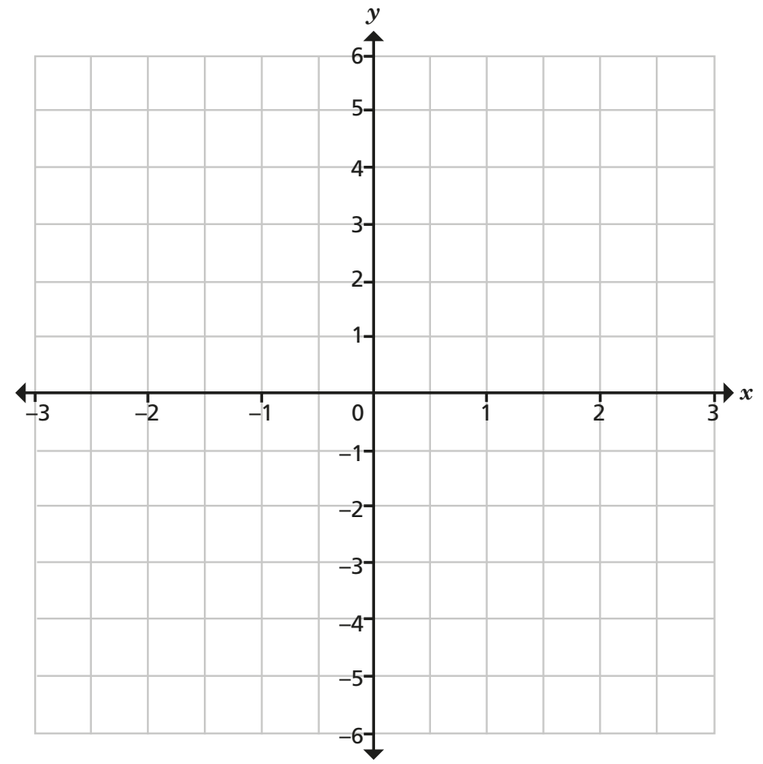
K $y = -2x$

x	–2	–1	0	1	2
y					

M $y = -\frac{1}{2}x$

x	–2	–1	0	1	2
y					

b) Plot and label the lines J, K, L and M.



c) What do you notice?

3 Compare your answers to questions 1 and 2

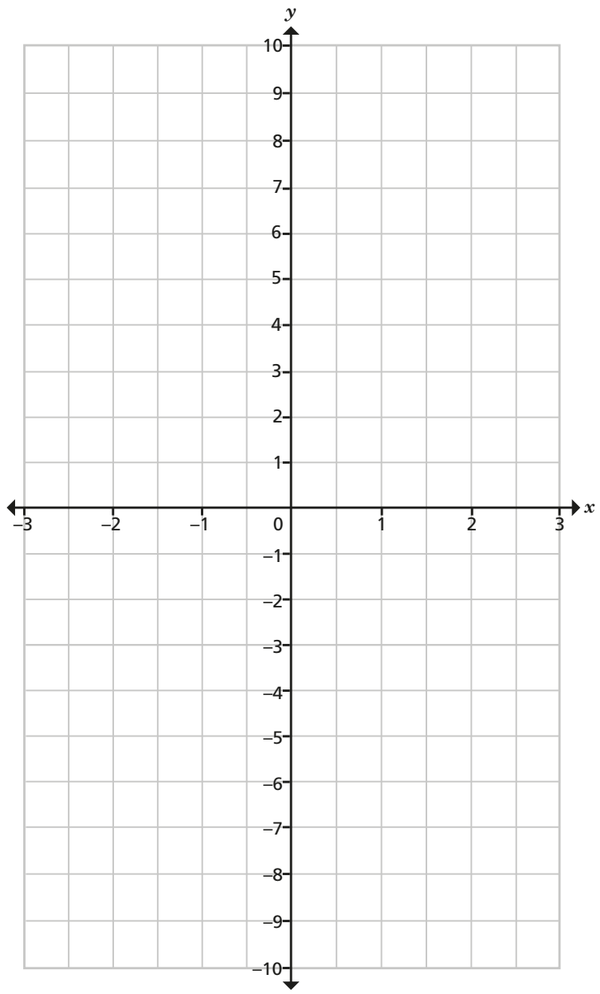
What is the same? What is different?

4 Five lines are given by the following equations.

L_1 $y = 3x$	L_3 $y = 2 + 3x$	L_5 $y = 3x - 5$
L_2 $y = 3x + 1$	L_4 $3 + 3x = y$	

a) What is the same about the equations? What is different?

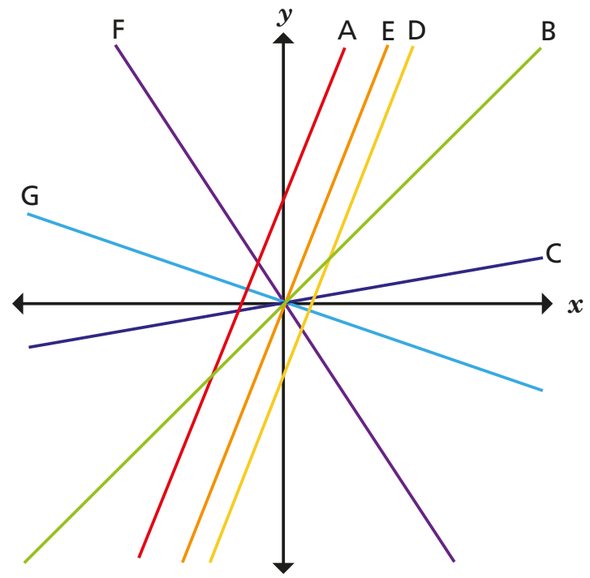
b) Draw and label the lines on the grid.



c) The general equation of a straight line is $y = mx + c$, where m is the gradient.

Each of these lines has the same gradient. How can you see this from the graph?

5 Seven lines have been drawn on the axes.



a) Match the line to its correct equation.

The equation of one of the lines is not given.

A	$y = \frac{1}{3}x$
B	$y = 5x + 4$
C	$y = -3x$
D	$y = 2x$
E	$y = -\frac{2}{3}x$
F	$5x - 3 = y$
G	

b) Fill in the missing equation.
How did you know what equation to write?

c) Draw the graph of $y = -7x$ on the axes.

Compare answers with a partner.