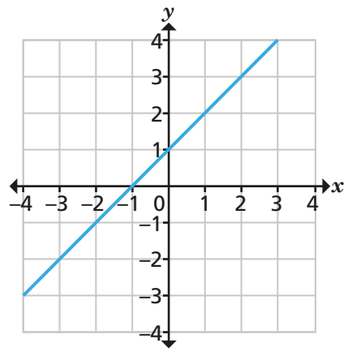
Find the equation of a straight line from a graph (2)

1 Work out the equations of the lines.

a)



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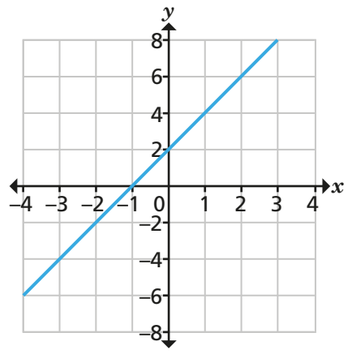
b)



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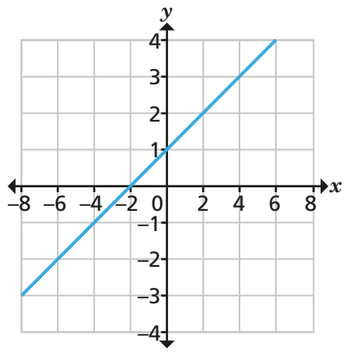
c)



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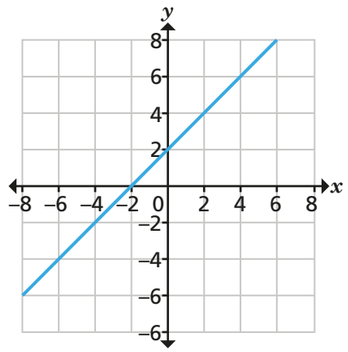
d)



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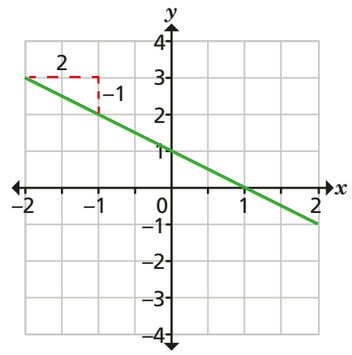
What is the same about each line? What is different?

Discuss it with a partner.

2 Tommy has worked out the equation of this line. Here are his workings.



y-intercept (0, 1), so $c = 1$

$$m = \frac{\text{change in } y}{\text{change in } x} = \frac{-1}{2} = -\frac{1}{2}$$

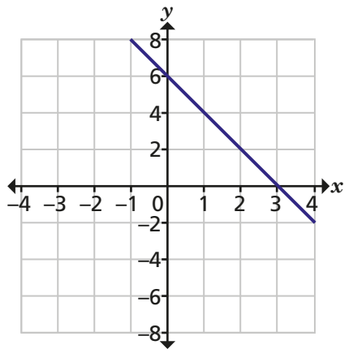
$$y = -\frac{1}{2}x + 1$$

Do you agree with Tommy? _____

Discuss it with a partner.

3 Work out the equations of the lines.

a)



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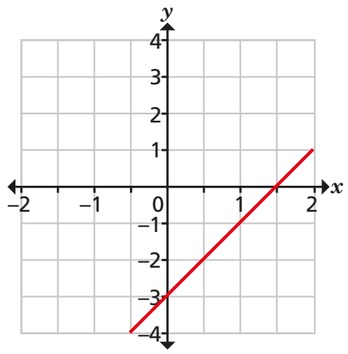
b)



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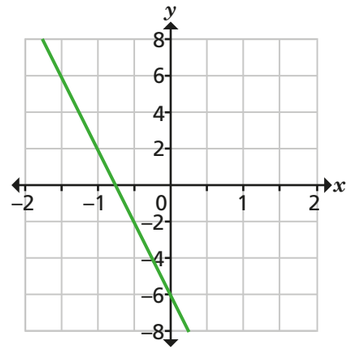
c)



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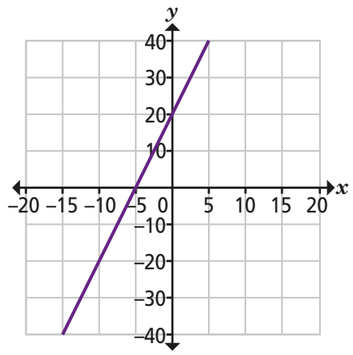
d)



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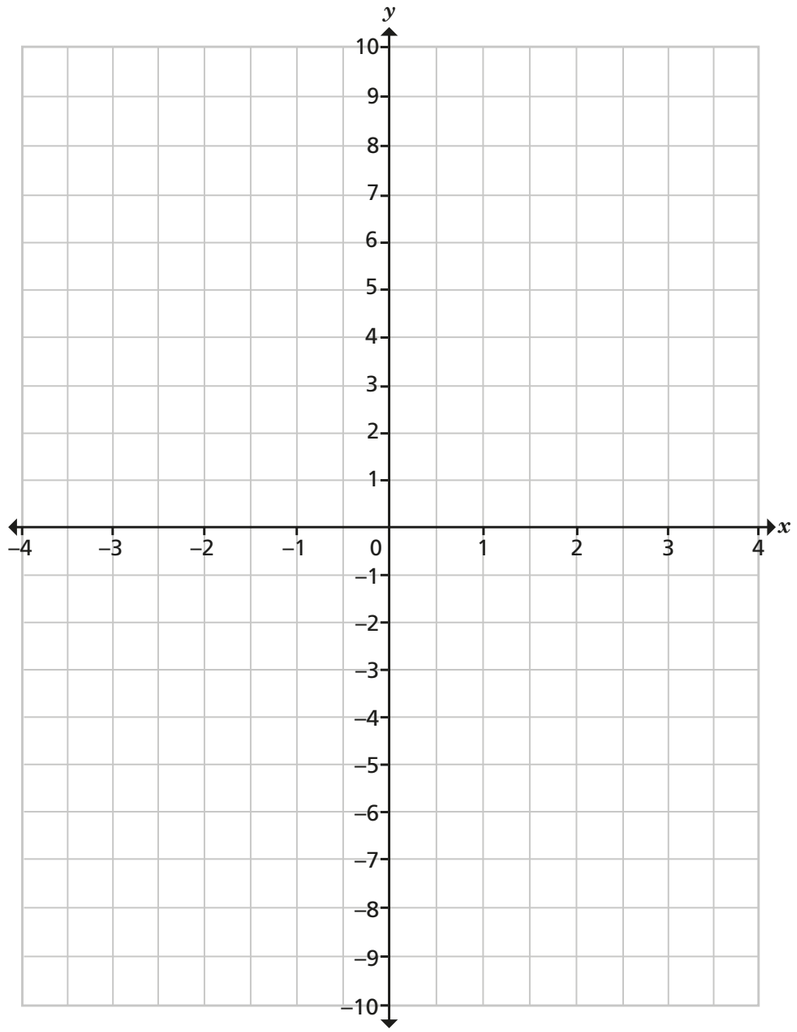
Compare answers with a partner.

4 Here is a coordinate grid.



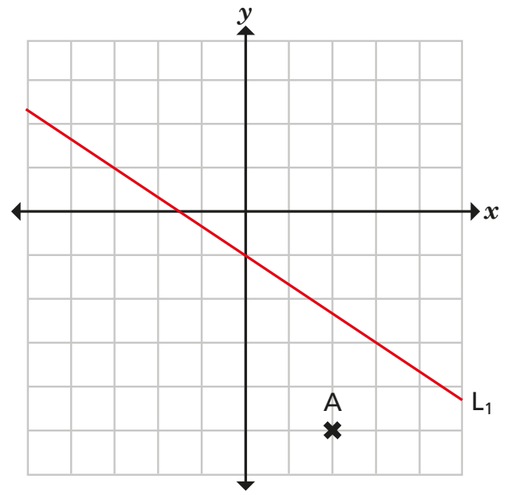
a) Draw the graph of $y = 3x + 1$. Label it A.

b) Translate line A by the vector $\begin{pmatrix} 0 \\ 2 \end{pmatrix}$. Label this line B.
What is the equation of line B?

c) Translate line A by the vector $\begin{pmatrix} 2 \\ 0 \end{pmatrix}$. Label this line C.
What is the equation of line C?

What do you notice?

5 The graph shows line L_1



a) If the coordinates of point A are (4, –10), what is the equation of L_1?

b) If the coordinates of point A are (6, –10), what is the equation of L_1?

c) If the coordinates of point A are (16, –5), what is the equation of L_1?

d) The coordinates of point A are, in fact, (16, –5).
A straight line L_2 passes through the points (–8, 3) and (24, 1).
Draw L_2 on the grid.
What is the equation of L_2?