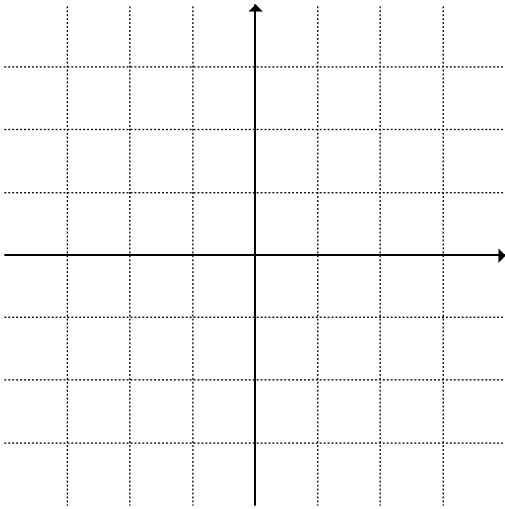




2018 Year 10 math topic test: Linear graphs and coordinate geometry © itute 2018

Q1 Plot the graph defined by the linear relation $y = -2 + \frac{x}{2}$ for $-2 \leq x \leq 3$. Clearly label and scale the axes.

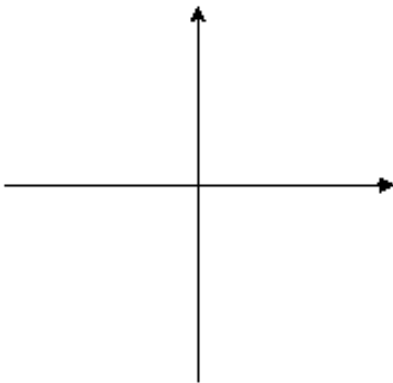
4 marks



Q2 Use any method to sketch the graph defined by each equation. Clearly label and scale the axes.

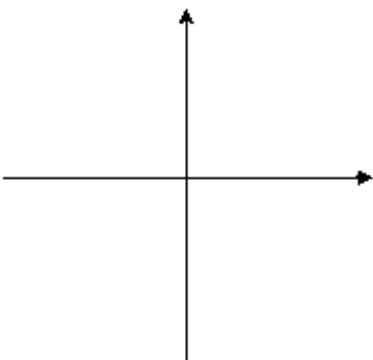
a. $x = \frac{5}{2}$ and $y = -3$

2 marks



b. $\frac{x}{2} - \frac{y}{3} = 1$

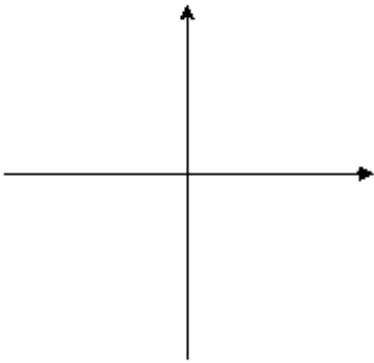
2 marks





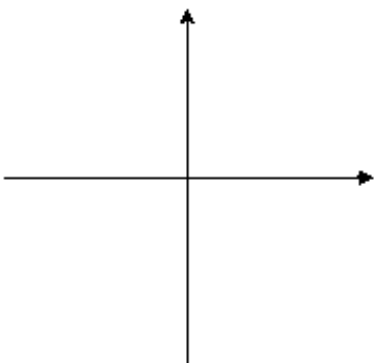
c. $\frac{x}{2} - \frac{y}{3} = 0$

2 marks



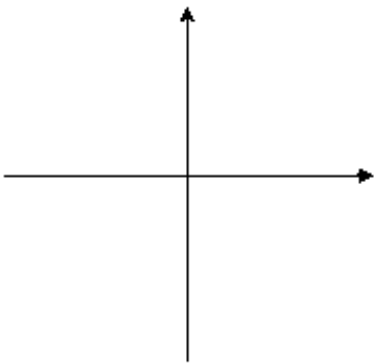
d. $3x - 2y = 3$

2 marks



e. $\frac{3x}{2} = 2y + 6$

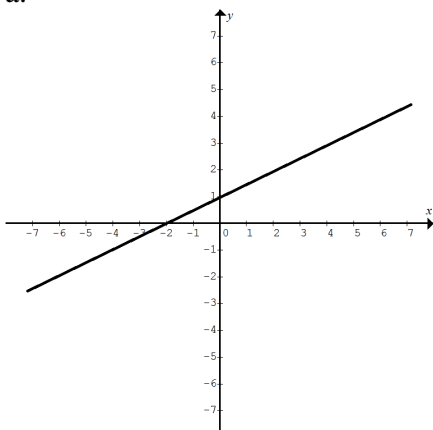
2 marks



Q3 Determine an equation which defines each of the following graphs.

a.

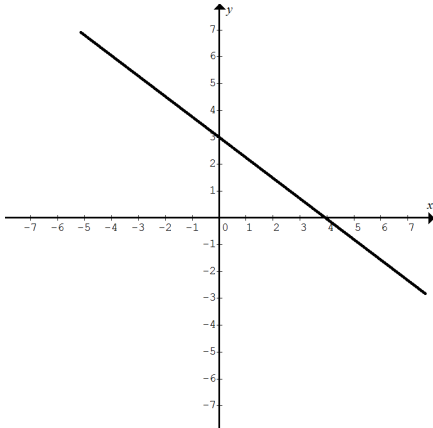
3 marks





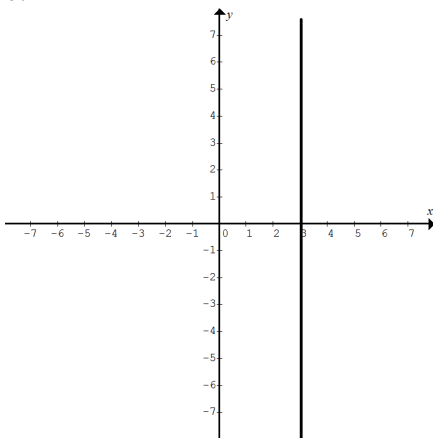
b.

3 marks



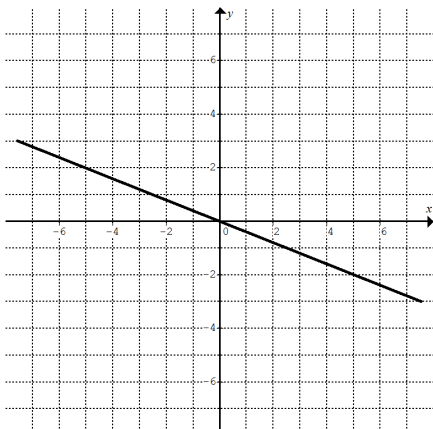
c.

1 mark



d.

3 marks



Q4 Determine an equation of the straight line

a. which passes through the point $(2, -5)$ and has a gradient of -3 .

3 marks



b. which passes through the points $(3, 0)$ and $\left(-1, \frac{1}{2}\right)$.

4 marks

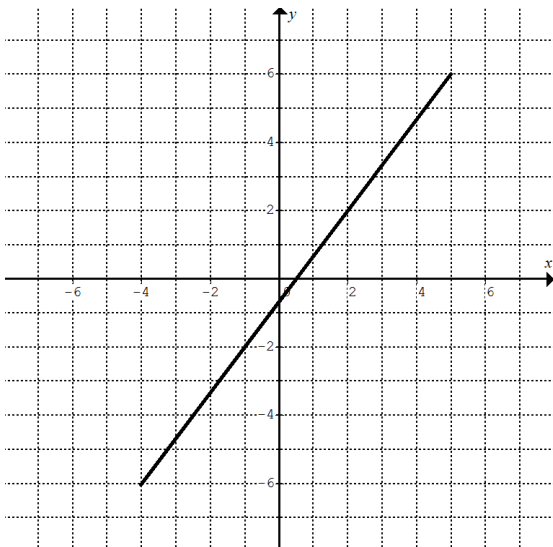
Q6a Find the **midpoint** of the line segment joining the two points $A(3, 0)$ and $B\left(-1, \frac{1}{2}\right)$.

3 marks

Q6b Find the **length** of the line segment joining the two points $A(3, 0)$ and $B\left(-1, \frac{1}{2}\right)$.

3 marks

Q7 Study the graph below.



a. Write down the coordinates of the midpoint of the line segment.

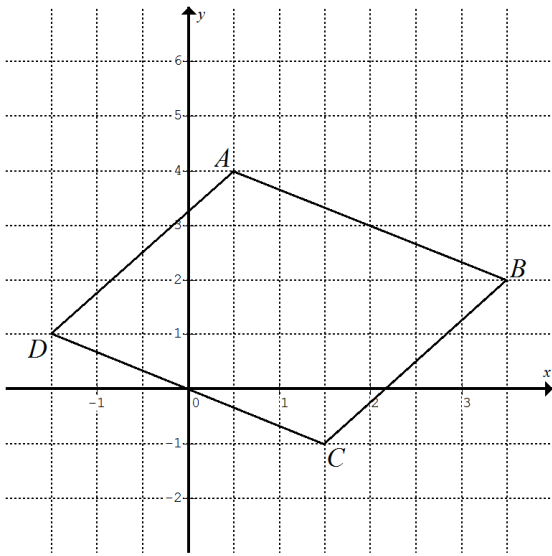
1 mark

b. Calculate the length of the line segment.

3 marks



Q8 Study the 2-dimensional figure below. Note: The scale on the x -axis is different from that on the y -axis.



a. Find the gradient of each of the line segments AB , BC , CD and DA . 2 marks

b. The 2-dimensional figure $ABCD$ can be considered as a parallelogram. Why? 1 mark

c. Are the diagonals of the 2-dimensional figure perpendicular? Show calculations. 3 marks

d. Give the exact name of the 2-dimensional figure $ABCD$. Justify your answer with calculations. 3 marks