

WJEC MATHEMATICS

HIGHER
3 TIER TOPICS

STRAIGHT LINES

@MrGoreMaths.

Spec 1 – Maths – P1

8. A sketch of the graph of the straight line $y = 7x + 2$ is shown below.

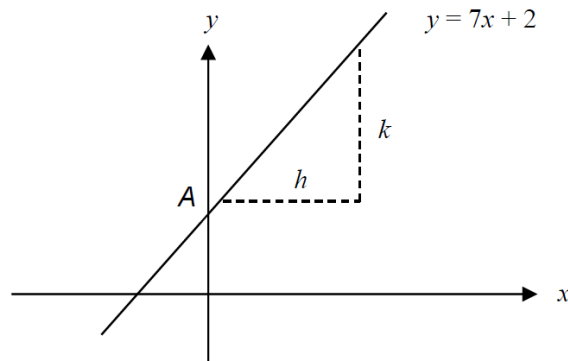


Diagram not drawn to scale

(a) What are the coordinates of the point A, where the line cuts the y-axis?
Circle your answer. [1]

- (2, 0) (7, 0) (0, 2) (0, 7) (7, 2)

(b) When h is equal to 1 unit, what is the value of k ?
Circle your answer. [1]

- 2 units 7 units 1 unit 3.5 units 14 units

(c) Which of the following equations is an equation of a straight line that is perpendicular to $y = 7x + 2$?
Circle your answer. [1]

- $y = 7x + 3$ $y = \frac{x}{7} + 3$ $y = 7x + 3$ $y = -\frac{x}{7} + 3$ $y = 2x + 7$

Spec 2 – Maths – P1

5. Circle the correct answer for each of the following statements.

(a) The gradient of the line $2y = 4x + 3$ is

$\frac{1}{2}$

$\frac{3}{2}$

$\frac{2}{3}$

$\frac{3}{4}$

2

[1]

(b) The line $3y = 5x - 6$ crosses the y -axis at

$y = -2$

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

$y = 2$

$y = \frac{5}{3}$

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

[1]

(c) The point with coordinates

$(3, -2)$

$(0, 2)$

$(-3, 2)$

$(2, 3)$

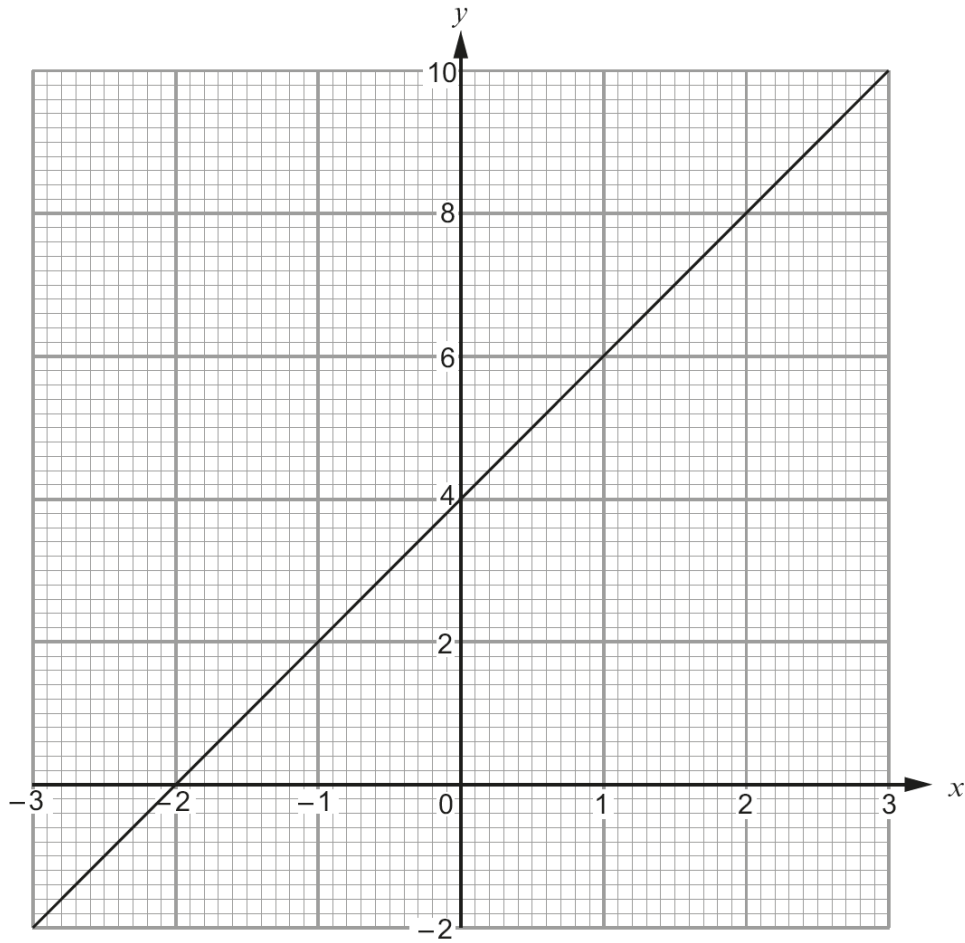
$(3, 7)$

lies on the line $y = 3x - 2$.

[1]

Nov 2016 – Maths – P2

6. (a) The diagram below shows the graph of a straight line for values of x from -3 to 3 .



(i) Write down the gradient of the above line. [1]

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(ii) Write down the equation of the line in the form $y = mx + c$, where m and c are whole numbers. [2]

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(b) Without drawing, show that the line $2y = 5x - 3$ is parallel to the line $4y = 10x + 7$. You must show working to support your answer. [2]

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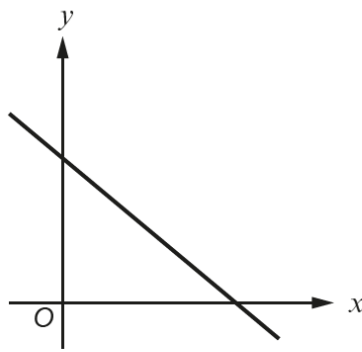
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June 2017 – Maths – P1

4. (a)



Which **one** of the following equations could represent the line shown in the graph above?
Circle your answer. [1]

- $y = -x - 2$ $y = -x + 2$ $y = x + 2$ $y = x - 2$ $y = -x.$

(b) Which **one** of the following points lies on the line $2y = 3x + 4$?
Circle your answer. [1]

- $(2, -5)$ $(5, 2)$ $(-2, 5)$ $(2, 5)$ $(-2, -5)$

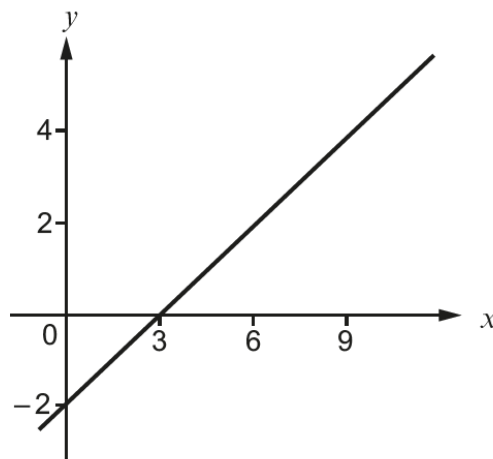
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(c)



What is the gradient of the line shown in the graph above?
Circle your answer. [1]

- $\frac{3}{2}$ $-\frac{3}{2}$ $\frac{2}{3}$ $-\frac{2}{3}$ -6

June 2017 – Maths – P2

9. (a) Circle the equation of a straight line that is parallel to the line $3y = 2x + 6$. [1]

$3y = 2x + 7$ $2y = 3x + 6$ $3y = -2x + 6$ $-3y = 2x + 6$ $2y = -3x + 6$

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- (b) Circle the equation of a straight line that is perpendicular to the line $y = 5x - 3$. [1]

$y = \frac{x}{5} + 3$ $y = 5x + 3$ $y = 5x + \frac{1}{3}$ $y = -5x + 3$ $y = \frac{-x}{5} + 3$

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Nov 2016 – Maths – P1

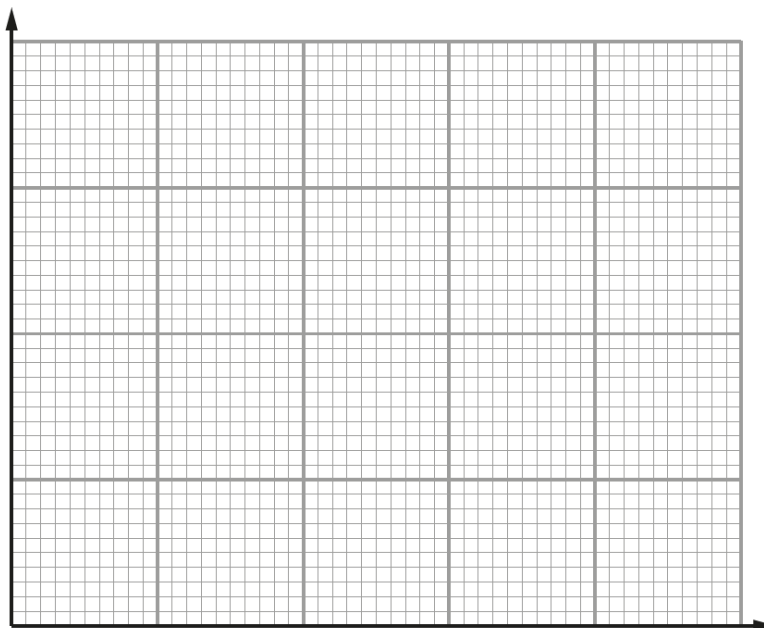
5. Petra is organising a prom for her year group.
The number of people attending the prom is likely to be between 20 and 80.

The cost of holding the prom at *Hotel Afonwen* would be as follows.

- Hire of the room: £100
- Food: £15 per person
- Welcome drink on arrival: £3 per person
- Decorations: £2 per person

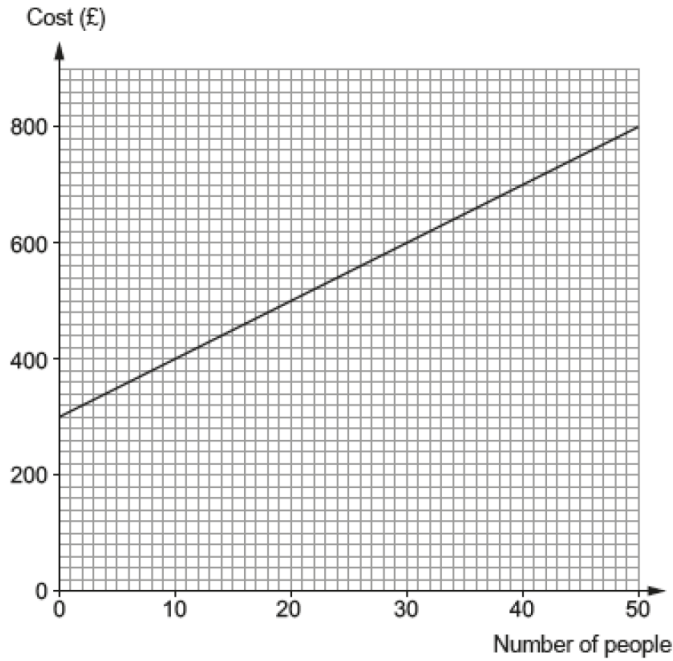
- (a) Draw a graph to illustrate the total cost of holding the prom for between 20 and 80 people.
Use the graph paper below. [4]

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Spec 1 – Numeracy – P1

6. Ffion has organised a conference in the *Hafod Hotel*. The hotel has given Ffion a graph to illustrate the costs for room hire with refreshments for different numbers of people.



- (a) (i) Calculate the gradient of the straight line graph. [2]

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- (ii) Explain what the gradient tells you about the conference costs. [1]

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- (iii) The straight line graph intersects the vertical axis at £300. Explain what this tells you about the conference costs. [1]

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(b) 20 more people arrived at the conference than Ffion had expected.
The hotel prepared extra food and set out more chairs in the conference room.

Calculate how much **extra** Ffion has to pay the hotel. [1]

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