Write your name, centre number and candidate number in the boxes below.

Surname	Other names

Centre number | | | | | |

Candidate number | | | | |

STEM | Exam Builder

Equation of a straight line

Time allowed: 40 minutes

Subject code **0580**

Mathematics

Questions from Paper 1 and Paper 2

You must have: a ruler marked in centimetres and millimetres, a protractor, compasses, a pen, an HB pencil and an eraser.
You may use a calculator.

Total marks

/ 31

Instructions

- Answer every question in the space provided on this paper.
- Write in black or dark blue ink. Pencil may be used for diagrams and graphs.
- Fill in your name, centre number and candidate number above.
- Show your working: a correct method can earn marks even if the answer is wrong.
- Unless a question says otherwise, give answers that are not exact to 3 significant figures, and angles in degrees to 1 decimal place.

Information

- This paper has 10 questions worth 31 marks in total.
- The marks for each question or part are shown in brackets, for example [3].

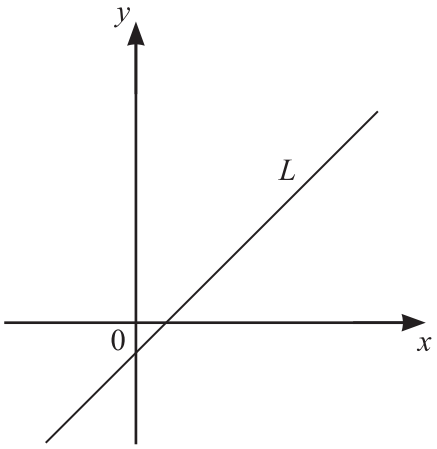
Advice

- Read every question through once before you write anything.
- Use the marks in brackets to judge how long to spend on each part.
- If you finish early, go back and check your working.

STEM | Exam Builder

Print at 100% (Actual size) so diagrams keep their real measurements.

1



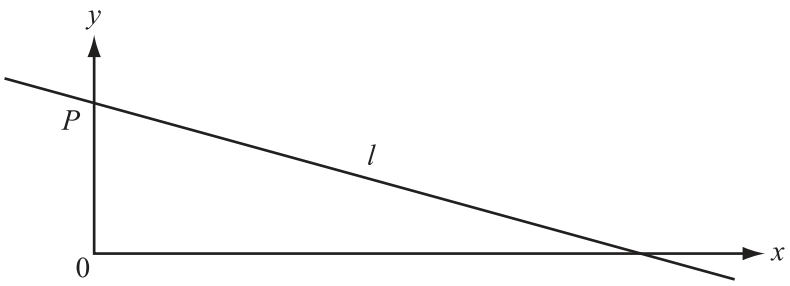
Explain why the equation of line L in the diagram cannot be $y = x + 2$.

.....

..... [1]

Equations of straight lines (y = mx + c) Click for more variations

2



NOT TO SCALE

The equation of the line l in the diagram is $y = 5 - x$.

(a) The line cuts the y-axis at P.

Write down the co-ordinates of P.

Answer(a) (..... , ...) [1]

(b) Write down the gradient of the line l.

Answer(b) ..... [1]

(a) Equations of straight lines (y = mx + c) (b) Equations of straight lines (y = mx + c) Click for more variations

STEM | Exam Builder

3 The line $y = 2x - 5$ intersects the line $y = 3$ at the point P.

Find the coordinates of the point P.

(....., ...) [2]

Equations of straight lines (y = mx + c) Click for more variations

4 The equation of line L is $y = 4x - 3$.

Write down

(a) the co-ordinates of the point where the line L crosses the y-axis,

(..... , ...) [1]

(b) the gradient of the line L,

..... [1]

(c) the equation of the line parallel to line L that passes through the origin.

..... [1]

(a) Equations of straight lines (y = mx + c) (b) Equations of straight lines (y = mx + c) (c) Parallel lines

Click for more variations

5 A straight line, l, has equation $y = 5x + 12$.

(a) Write down the gradient of line l.

..... [1]

(b) Find the coordinates of the point where line l crosses the x-axis.

STEM | Exam Builder

(..... , ...) [2]

(a) Equations of straight lines (y = mx + c) (b) Equations of straight lines (y = mx + c) Click for more variations

6 Find the equation of the straight line that passes through the points $(2, -2)$ and $(3, 10)$.

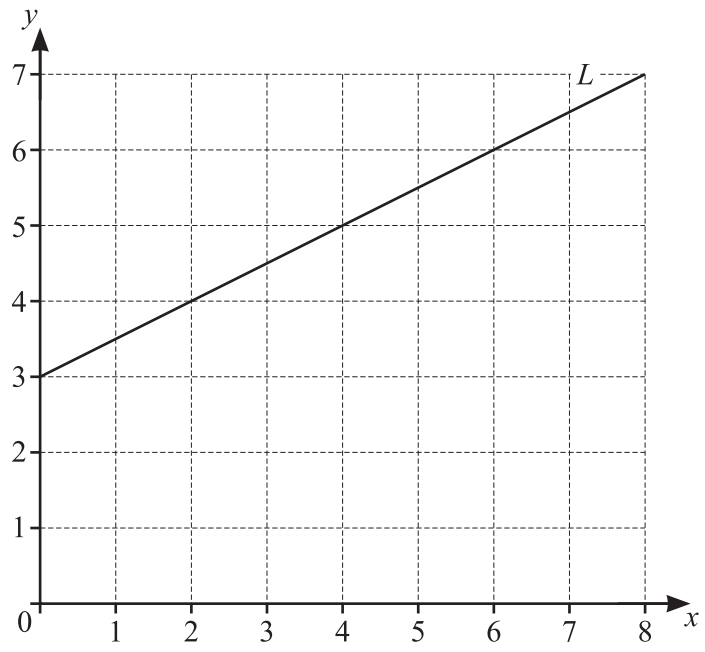
Give your answer in the form $y = mx + c$.

$y =$ ..... [3]

Equations of straight lines (y = mx + c) Click for more variations

STEM | Exam Builder

7 Line L is shown on the grid.



(a) Find the equation of line L in the form $y = mx + c$.

$y =$ ..... [2]

(b) Line L crosses the x-axis at P.

Find the coordinates of P.

(..... , ...) [2]

(a) Equations of straight lines (y = mx + c) (b) Equations of straight lines (y = mx + c) Click for more variations

STEM | Exam Builder

8 The points (2, 5), (3, 3) and (k, 1) all lie in a straight line.

(a) Find the value of k.

Answer(a) $k =$ ..... [1]

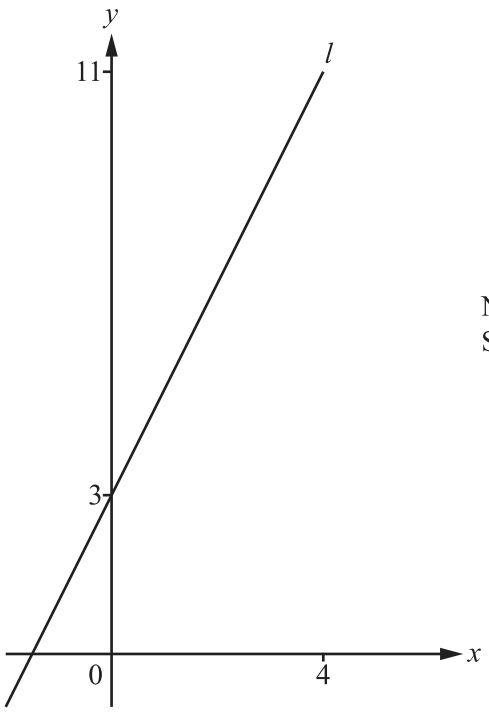
(b) Find the equation of the line.

Answer(b) ..... [3]

(a) Gradient of a line (b) Equations of straight lines (y = mx + c) Click for more variations

STEM | Exam Builder

9



NOT TO SCALE

The diagram shows the straight line, l, which passes through the points (0, 3) and (4, 11).

(a) Find the equation of line l in the form $y = mx + c$.

Answer(a) $y =$ ..... [3]

(b) Line p is perpendicular to line l.

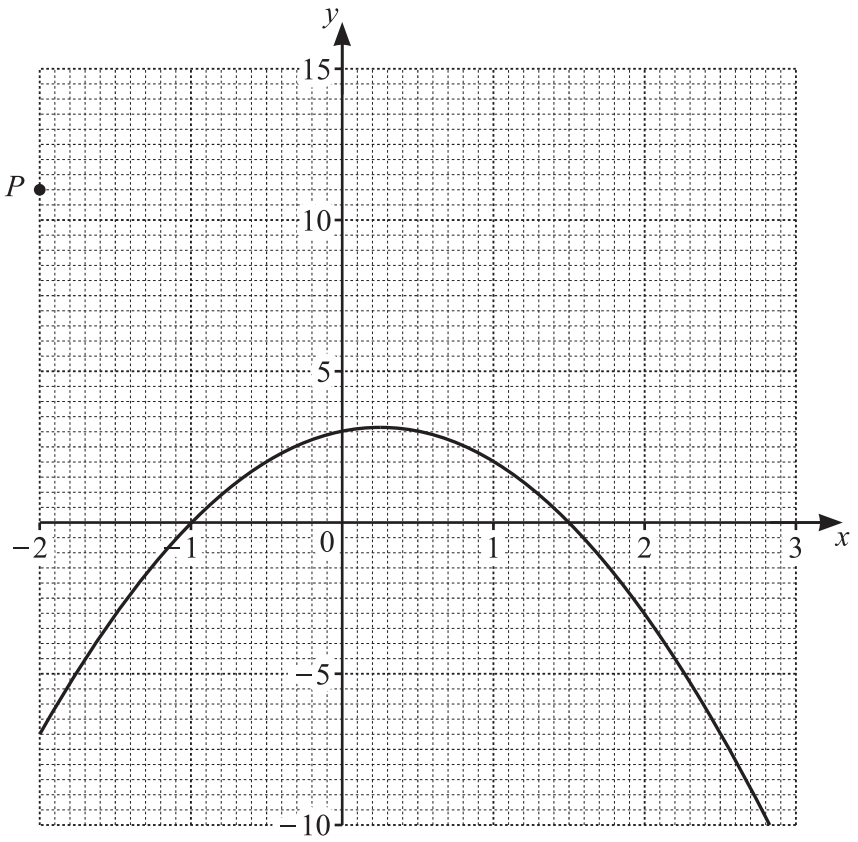
Write down the gradient of line p.

Answer(b) ..... [1]

STEM | Exam Builder

(a) Equations of straight lines (y = mx + c) (b) Perpendicular lines Click for more variations

10 The diagram shows the graph of $y = f(x)$ and the point $P(-2, 11)$.



The tangent from P touches the graph of $y = f(x)$ at the point (a, b).
The values of a and b are integers.

(a) By drawing this tangent, find the value of a and the value of b.

$a =$ ....., $b =$ ..... [2]

(b) Find the equation of the tangent.
Give your answer in the form $y = mx + c$.

STEM | Exam Builder

$y =$ ..... [3]

(a) Drawing a tangent to a curve (b) Equations of straight lines (y = mx + c) Click for more variations