

Parallel and Perpendicular Lines

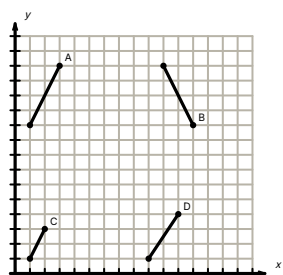
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NAME _____

DATE _____

1 Here are four lines on a square grid.

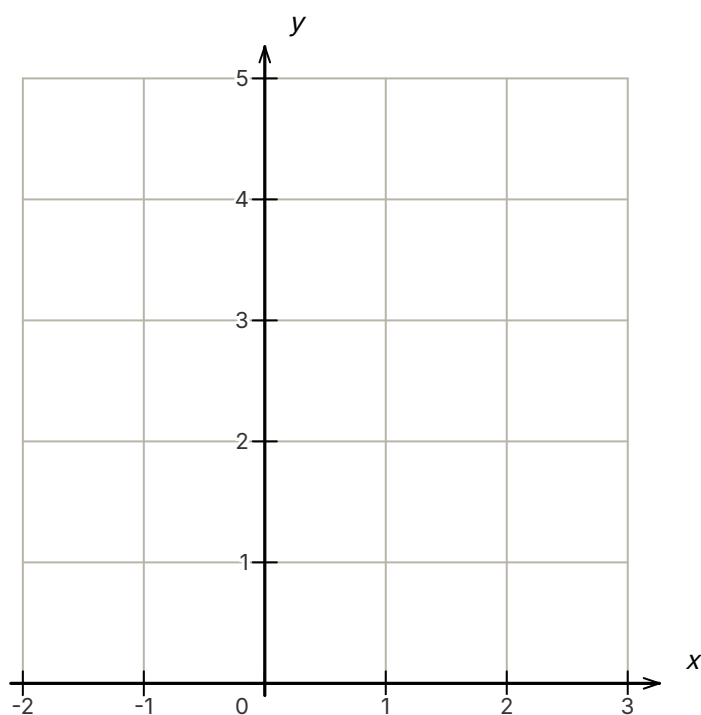
⌂ EITHER PAPER 3 MARKS



(a) Which two lines are parallel?

Line ____ and line ____

(b) Here is a different grid.



There are four points on this grid that each have both coordinates that are whole numbers and $x\text{-coordinate} + y\text{-coordinate} = 5$

Plot the four points on the grid.

2 Write down the equation of a straight line parallel to $y = -\frac{1}{3}x + 1$

⌂ EITHER PAPER 1 MARK

- 3 (a) Write down the equation of a straight line that is parallel to $y - 4x = -5$

 EITHER PAPER 2 MARKS

- (b) A straight line

- has gradient -4 - passes through the point $(-3, 6)$

Circle the equation of the line.

$$y = -4x$$

$$y = -3x - 3$$

$$y = -4x + 6$$

$$y = -4x - 6$$

-
- 4 Here are the equations of two straight lines.

 EITHER PAPER 2 MARKS

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

$$15y = -9x + 5$$

Isla says that the lines are parallel.

Is Isla correct? You must give a reason for your answer.

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- 5 Do not use a graphical method in either part of this question.

 EITHER PAPER 5 MARKS

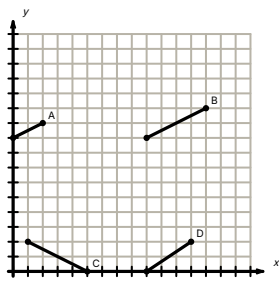
- (a) Show that the lines $y = 2x + 3$ and $5y - 10x = 40$ are parallel.

- (b) Is the point $(-1, -2)$ above, below or on the line $y = 2x + 3$?

Tick one box.

Above Below On the line

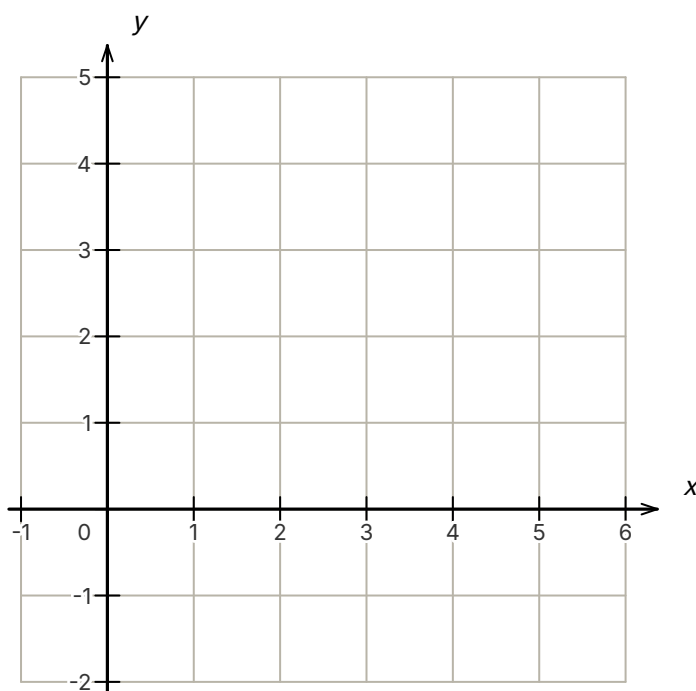
You must show your working.



(a) Which two lines are parallel?

Line ____ and line ____

(b) Here is a different grid.



There are four points on this grid that each have both coordinates that are whole numbers and $x\text{-coordinate} + y\text{-coordinate} = 8$

Plot the four points on the grid.

- 8 (a) Write down the equation of a straight line that is parallel to $y + 4x = -9$

EITHER PAPER 2 MARKS

- (b) A straight line

- has gradient -6 - passes through the point $(-2, 4)$

Circle the equation of the line.

$$y = 5x + 14$$

$$y = -6x$$

$$y = -6x + 4$$

$$y = -6x - 8$$

-
- 9 Here are the equations of two straight lines.

EITHER PAPER 2 MARKS

$$y = \frac{4}{3}x + 2$$

$$12y = 9x + 2$$

Amara says that these lines are parallel.

Is Amara correct?

You must give a reason for your answer.

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- 10 Do not use a graphical method in either part of this question.

EITHER PAPER 5 MARKS

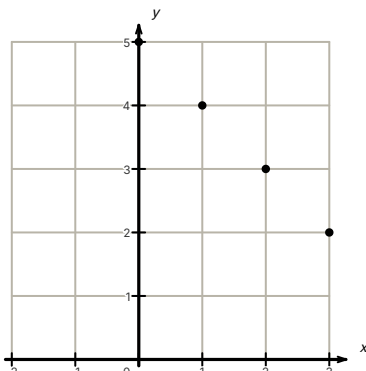
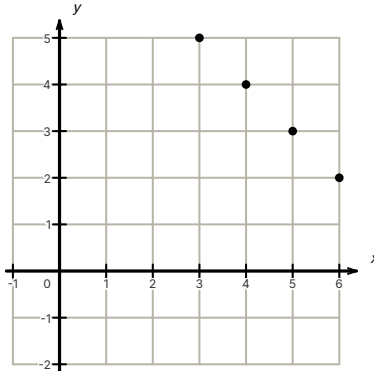
- (a) Show that the lines $y = 3x + 7$ and $5y - 15x = 25$ are parallel.

- (b) Is the point $(-3, 2)$ above, below or on the line $y = 3x + 7$?

Tick one box.

Above Below On the line

You must show your working.

1	(a) Line A and line C (b) Points at (0, 5), (1, 4), (2, 3) and (3, 2) (b) 	2	$y = -\frac{1}{3}x + k$ for any number k other than 1, for example $y = -\frac{1}{3}x - 1$
3	(a) $y = 4x + 5$ (any line $y = 4x + k$ with $k \neq -5$) (b) $y = -4x - 6$	4	No: the first line has gradient $\frac{3}{5}$ and the second line has gradient $-\frac{3}{5}$
5	(a) $5y - 10x = 40$ rearranges to $y = 2x + 8$; both lines have gradient 2, so they are parallel (b) Below: the line has $y = 1$ at $x = -1$ and the point has $y = -2$	6	(a) Line A and line B (b) Points at (3, 5), (4, 4), (5, 3) and (6, 2) (b) 
7	$y = -\frac{5}{3}x + k$ for any number k other than 6, for example $y = -\frac{5}{3}x - 6$	8	(a) $y = -4x + 9$ (any line $y = -4x + k$ with $k \neq -9$) (b) $y = -6x - 8$
9	No: the first line has gradient $\frac{4}{3}$ and the second line has gradient $\frac{3}{4}$	10	(a) $5y - 15x = 25$ rearranges to $y = 3x + 5$; both lines have gradient 3, so they are parallel (b) Above: the line has $y = -2$ at $x = -3$ and the point has $y = 2$