

GCSE Maths: Parallel and perpendicular lines (Foundation): worksheet

GCSE Maths - Straight-Line Graphs and Coordinates - Foundation - Lesson 12.7

Name: _____

Date: _____

Score: _____

11 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch12-straight-line-graphs-coordinates/foundation/parallel-and-perpendicular-lines/

Exercise 12I Parallel lines Non-calculator

1 Write down the gradient of any line that is parallel to each of these lines.

(a) $y = 3x + 2$

Answer: _____

(b) $y = -x + 7$

Answer: _____

(c) $y = \frac{1}{2}x - 1$

Answer: _____

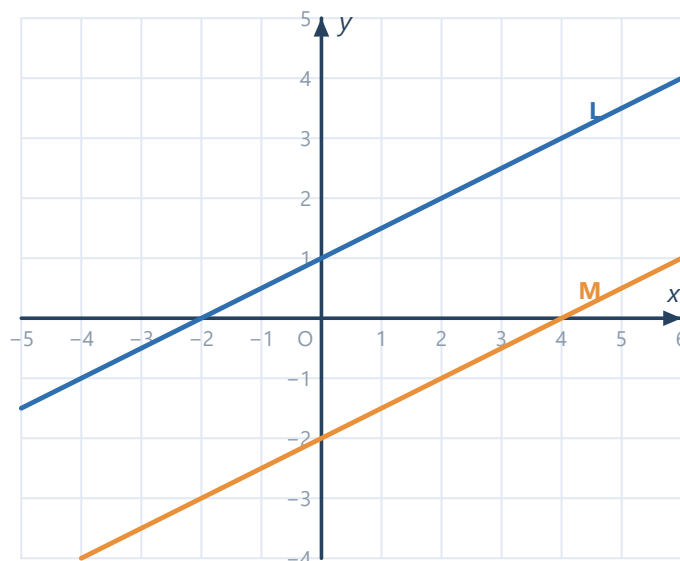
(d) $y = -2x + 5$

Answer: _____

2 Which of these lines are parallel to $y = 2x + 1$? A: $y = 2x - 3$ B: $y = x + 2$ C: $y = 2x$ D: $y = -2x + 1$

Answer: _____

3 The grid shows two parallel lines L and M. Find the equation of each line.



(a) line L

Answer: _____

(b) line M

Answer: _____

4 Find the equation of the line parallel to the given line that passes through the given point.

(a) parallel to $y = 2x + 1$, through (3, 4)

Answer:

(b) parallel to $y = -x + 4$, through (2, 5)

Answer:

(c) parallel to $y = \frac{1}{2}x + 3$, through (4, 0)

Answer:

(d) parallel to $y = -3x$, through (-1, 2)

Answer:

5 Find the equation of the line that is parallel to $y = 4x + 3$ and has a y-intercept of -2.

Answer:

6 Show that the two lines in each pair are parallel.

(a) $y = 2x + 3$ and $2y = 4x - 5$

Answer:

(b) $4x + 2y = 7$ and $y = -2x + 1$

Answer:

7 The vertices of quadrilateral ABCD are A(-2, -1), B(2, 1), C(3, 4) and D(-1, 2). Show that ABCD is a parallelogram.

Answer:

8 Find the value of k in each case so that the lines are parallel.

(a) $y = 3x + 1$ and $y = kx - 5$

Answer:

(b) $y = 10x$ and $y = 2kx + 1$

Answer:

9 On a map a straight road has equation $y = \frac{1}{2}x + 1$. A new straight railway runs parallel to the road and passes through the point (4, 6). Find the equation of the railway.

Answer:

10 Explain why the lines $y = 2x + 1$ and $y = 2x + 4$ never meet.

Answer:

11 Here are six lines: A $y = 2x + 3$ B $y = -x + 2$ C $y = 2x - 4$ D $y = -x + 5$ E $y = \frac{1}{2}x$ F $y = 3$. Write down the pairs of parallel lines.

Answer: