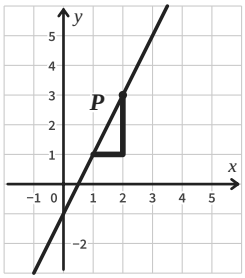
Perpendicular lines: the gradient

1

Draw the line through P perpendicular to the line shown. Write its gradient.



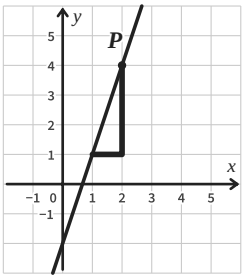
across 1, up 2

across 2, down 1

Gradient _____

2

Draw the line through P perpendicular to the line shown. Write its gradient.

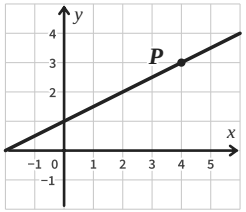


across 1, up 3

Gradient _____

3

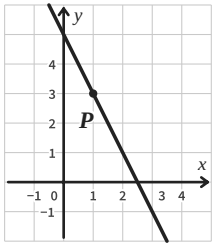
Draw the line through P perpendicular to the line shown. Write its gradient.



Gradient _____

4 *Notice the change!*

Draw the line through P perpendicular to the line shown. Write its gradient.



Gradient _____

5

Find the gradient of a line perpendicular to $y = 4x + 1$.

$m = 4$

Gradient _____

6

Find the gradient of a line perpendicular to $y = -5x + 2$.

Gradient _____

7

Find the gradient of a line perpendicular to $y = \frac{1}{3}x - 2$.

Gradient _____

8

Are $y = 2x + 3$ and $y = -\frac{1}{2}x + 1$ perpendicular?

Show how you know.

Answer _____

Perpendicular lines: the gradient *further practice*

9

Find the gradient of a line perpendicular to $y = 6x - 1$.

Answer _____

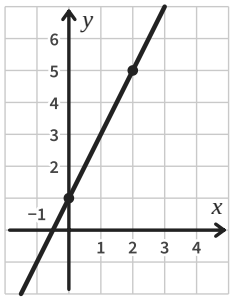
10

Find the gradient of a line perpendicular to $y = 3 - 2x$.

Answer _____

11

Find the gradient of a line perpendicular to the line on the grid.



Answer _____

12

Find the two pairs of perpendicular lines.

A $y = 3x + 1$ **B** $y = -3x$

C $y = -\frac{1}{3}x + 2$ **D** $y = \frac{1}{3}x$

Answer _____

13

Find the gradient of a line perpendicular to $y = \frac{2}{3}x + 1$.

Answer _____

14

A is (1, 2) and B is (3, 8).
Find the gradient of a line perpendicular to AB.

Answer _____

15

On a plan of a park, a path follows the line $y = \frac{1}{4}x + 3$. A new path will cross it at right angles. What is the gradient of the new path?

Answer _____

16

Jo says $y = 5x + 2$ and $y = -5x + 2$ are perpendicular, because the gradients have opposite signs.
Is Jo right? Explain.

Answer _____