

Math

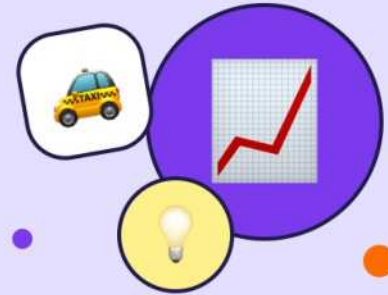
Grade 8

Straight-line graphs

Use tables and rules to describe linear functions.



I can find the slope and intercept of $y = mx + b$.



1

**Complete the table**

Fill in the empty boxes.

x	0	1	2	3	4
$y = 2x + 1$					
$y = -x + 4$					
$y = 3x - 2$					

2

**Pick the answer**

Circle the right answer.

1. What is the slope of $y = 3x + 2$?

☐ A 3☐ B 2☐ C 5

2. Where does $y = -2x + 6$ cross the y-axis?

☐ A -2☐ B 6☐ C 3

3. A taxi costs 4 to start plus 2 per km. Which rule fits?

☐ A $y = 4x + 2$ ☐ B $y = 6x$ ☐ C $y = 2x + 4$

3 Slope and intercept

Write the slope and the y-intercept of each line.

1. $y = 4x - 3$ slope = _____ y-intercept = _____
2. $y = -2x + 5$ slope = _____ y-intercept = _____
3. $y = x + 7$ slope = _____ y-intercept = _____
4. $y = 6 - 3x$ slope = _____ y-intercept = _____
5. $y = 0.5x$ slope = _____ y-intercept = _____

4 Slope from two points

Find the slope of the line through the two points.

Points	Slope
(0, 1) and (2, 7)	
(1, 5) and (3, 1)	
(0, -2) and (4, 0)	

5 Match the line

Draw a line to match each pair.

☐ $y = 2x + 1$ ●

☐ $y = -x + 3$ ●

☐ $y = 4$ ●

☐ $y = 3x$ ●

● A. horizontal line

● B. goes through (0, 0)

● C. rises, crosses the y-axis at 1

● D. falls, crosses the y-axis at 3

6 True or false

Circle true or false.

1. The line $y = 5x - 2$ rises.
2. $y = -3x + 1$ crosses the y-axis at -3 .
3. Parallel lines have the same slope.
4. The point $(2, 5)$ lies on $y = 2x + 1$.
5. The point $(1, 4)$ lies on $y = 3x - 2$.

True

False

True

False

True

False

True

False

True

False

7 Lines in real life

Circle the right answer.

1. A phone plan costs 10 a month plus 0.5 per GB. Which rule gives the cost y for x GB?

A $y = 10x + 0.5$

B $y = 0.5x + 10$

C $y = 10.5x$

2. A candle is 20 cm tall and burns 2 cm per hour. After how many hours is it gone?

A 10

B 18

C 40

3. Which line is the steepest?

A $y = 2x + 9$

B $y = -x$

C $y = 5x - 1$

8 Draw it

Plot $y = 2x + 1$ for x from 0 to 4 on a grid.



How did it go?



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Grade 8

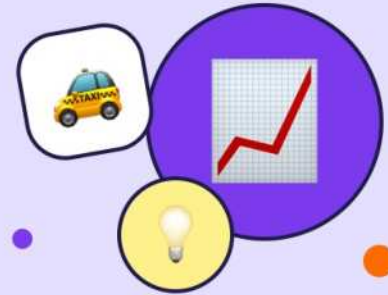
Answer key

Straight-line graphs

Use tables and rules to describe linear functions.



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1

**Complete the table**

Fill in the empty boxes.

x	0	1	2	3	4
$y = 2x + 1$	1	3	5	7	9
$y = -x + 4$	4	3	2	1	0
$y = 3x - 2$	-2	1	4	7	10

2

**Pick the answer**

Circle the right answer.

1. What is the slope of $y = 3x + 2$?

A 3

B 2

C 5

2. Where does $y = -2x + 6$ cross the y-axis?

A -2

B 6

C 3

3. A taxi costs 4 to start plus 2 per km. Which rule fits?

A $y = 4x + 2$ B $y = 6x$ C $y = 2x + 4$

3 Slope and intercept

Write the slope and the y-intercept of each line.

1. $y = 4x - 3$ slope = 4 y-intercept = -3
2. $y = -2x + 5$ slope = -2 y-intercept = 5
3. $y = x + 7$ slope = 1 y-intercept = 7
4. $y = 6 - 3x$ slope = -3 y-intercept = 6
5. $y = 0.5x$ slope = 0.5 y-intercept = 0

4 Slope from two points

Find the slope of the line through the two points.

Points	Slope
(0, 1) and (2, 7)	3
(1, 5) and (3, 1)	-2
(0, -2) and (4, 0)	0.5

5 Match the line

Draw a line to match each pair.

C $y = 2x + 1$ ●

D $y = -x + 3$ ●

A $y = 4$ ●

B $y = 3x$ ●

● **A.** horizontal line

● **B.** goes through (0, 0)

● **C.** rises, crosses the y-axis at 1

● **D.** falls, crosses the y-axis at 3

6 True or false

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True

False

True

False

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False

True

False

True

False

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