

Grade 8 - Slope and Similar Triangles - Worksheet

Common Core 8.EE.B.6 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

These 21 problems practice slope from similar triangles and the equations $y = mx$ and $y = mx + b$ (Common Core 8.EE.B.6). Each problem has its own space for work, so print the page and write directly on it.

The problems start with direct skill checks and grow harder as you go. Later items write equations from graphs, tables and real situations. Use the answer key afterwards to check every step.

Grade 8 · Common Core State Standards: **8.EE.B.6**

Exercise 1 - Slope from two points

Find the slope of the line through $(1,2)$ and $(3,8)$.

Exercise 2 - Negative slope

Find the slope of the line through $(-2,5)$ and $(4,-1)$.

Exercise 3 - Slope and intercept

Identify the slope and y-intercept of $y = -3x + 7$.

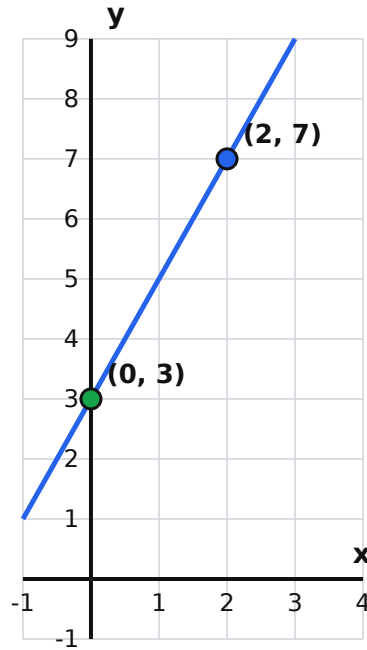
Exercise 4 - Graph it

Make a table of $x = 0, 1, 2$ for $y = 2x + 1$, then graph the line.

Exercise 5 - Write the equation

Write the equation of the line with slope 4 and y-intercept -2 .

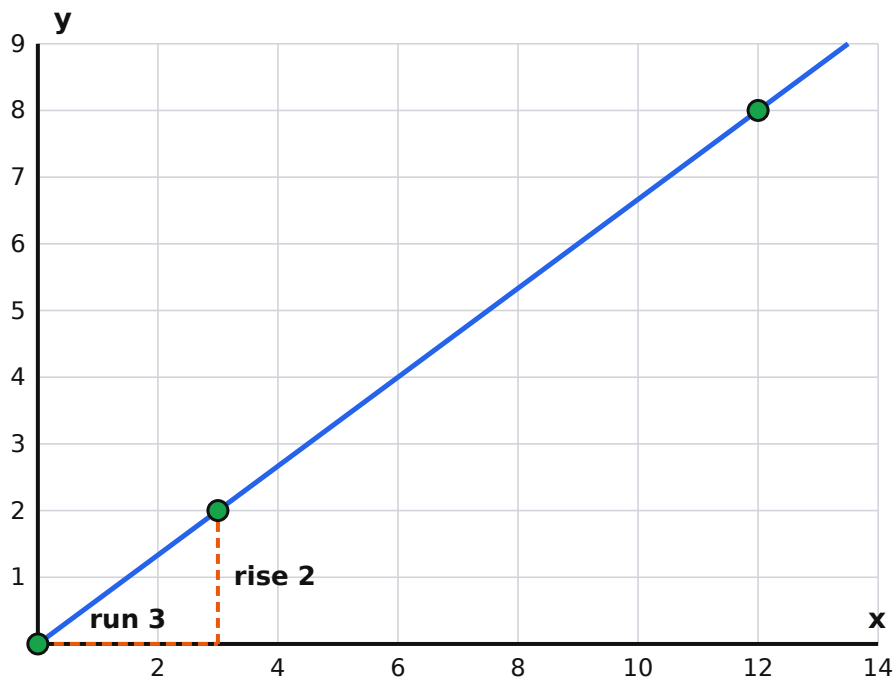
Exercise 6 - Equation from a graph



A line through $(0, 3)$ and $(2, 7)$.

Write the equation of the line.

Exercise 7 - Similar triangles



Small triangle: run 3, rise 2.

A larger right triangle on the same line has a run of 12. Find its rise.

Exercise 8 - Show equal slopes

Points $A(0,0)$, $B(2,3)$ and $C(4,6)$ lie on one line. Show that the slope from A to B equals the slope from B to C .

Exercise 9 - Equation from two points

Write the equation of the line through $(0,-1)$ and $(3,5)$.

Exercise 10 - Find b

Write the equation of the line through $(1,4)$ and $(3,10)$.

Exercise 11 - Slope and a point

A line has slope $\frac{1}{2}$ and passes through $(4,5)$. Write its equation.

Exercise 12 - Horizontal line

Find the slope and equation of the line through $(-2,3)$ and $(5,3)$.

Exercise 13 - Rewrite as $y = mx + b$

Rewrite $2x + y = 6$ in the form $y = mx + b$. State m and b .

Exercise 14 - Solve for y

Rewrite $3y = 6x - 9$ in the form $y = mx + b$.

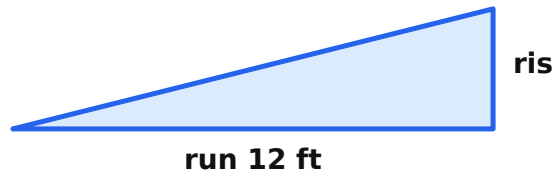
Exercise 15 - Where it crosses the x-axis

Find the point where $y = 2x - 4$ crosses the x-axis.

Exercise 16 - Parallel lines

Show that the lines $y = 2x + 1$ and $y = 2x - 3$ are parallel, and find how many units apart their y-intercepts are.

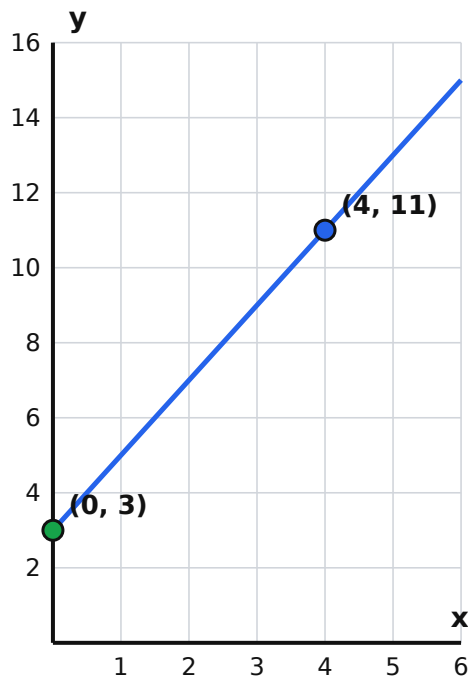
Exercise 17 - Ramp



A wheelchair ramp at the library.

A ramp rises 3 feet over a horizontal run of 12 feet. Find its slope. A longer ramp with the same slope has a run of 20 feet. How high does it rise?

Exercise 18 - Taxi fare



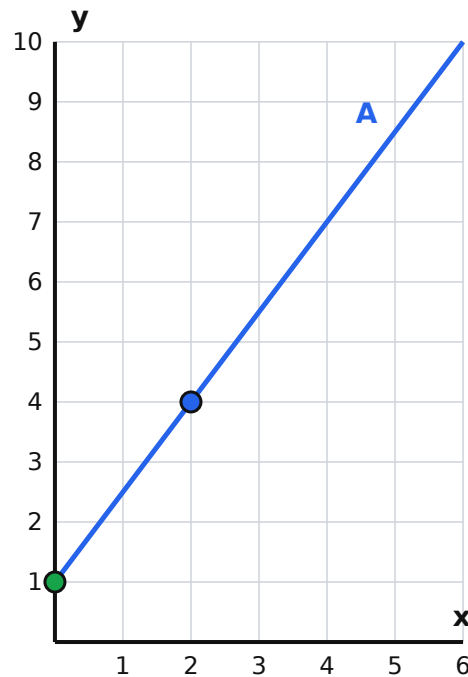
Fare in dollars after x miles.

A taxi charges a flat fee of \\$3 plus \\$2 for each mile. Write an equation for the fare y after x miles and find the fare for 10 miles.

Exercise 19 - Plant growth

Aisha's savings jar holds \\$40 on day 0, and she adds \\$2.50 each day. Write an equation for the amount y on day x and find the amount on day 12.

Exercise 20 - Compare lines



Line A.

Line A is graphed. Line B has the equation $y = x + 5$. Which line has the greater slope? Which has the greater y-intercept?

Exercise 21 - Explain

Noah says that the slope between (0,0) and (2,3) is different from the slope between (2,3) and (6,9) because the numbers are larger. Use similar triangles to explain why he is wrong.