

Grade 8 - Systems of Linear Equations - Worksheet

Common Core 8.EE.C.8a, 8.EE.C.8b, 8.EE.C.8c · maths-pdf.fr/en/

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

These 21 problems practice systems of two linear equations solved by graphing, substitution and elimination (Common Core 8.EE.C.8a, 8.EE.C.8b and 8.EE.C.8c). 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 include systems with no solution or infinitely many solutions and word problems. Use the answer key afterwards to check every step.

Grade 8 · Common Core State Standards: **8.EE.C.8a, 8.EE.C.8b, 8.EE.C.8c**

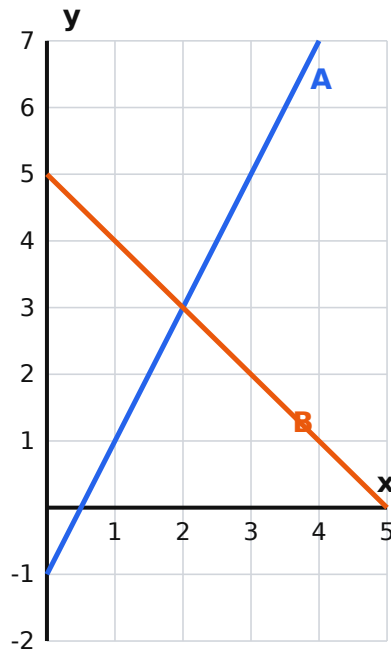
Exercise 1 - Check a solution

Is $(2,3)$ a solution of $x+y=5$ and $2x-y=1$?

Exercise 2 - Not a solution

Is $(1,2)$ a solution of $x+y=3$ and $x-y=2$?

Exercise 3 - Solve by graphing



A: $y = 2x - 1$ and B: $y = -x + 5$.

Read the solution of $y = 2x - 1$ and $y = -x + 5$ from the graph.

Exercise 4 - Graph two lines

Graph $y = 2x - 2$ and $y = -x + 4$ and find where they cross.

Exercise 5 - Substitution 1

Use substitution on $y = 2x$ and $x + y = 15$.

Exercise 6 - Substitution 2

Use substitution on $y = x + 3$ and $3x + y = 19$.

Exercise 7 - Substitution 3

Use substitution on $x = y - 2$ and $2x + 3y = 21$.

Exercise 8 - Elimination 1

Use elimination on $x + y = 16$ and $x - y = 6$.

Exercise 9 - Elimination 2

Use elimination on $3x + y = 17$ and $2x - y = 3$.

Exercise 10 - Elimination with a multiplier

Solve: $2x+3y=12$ and $x+y=5$.

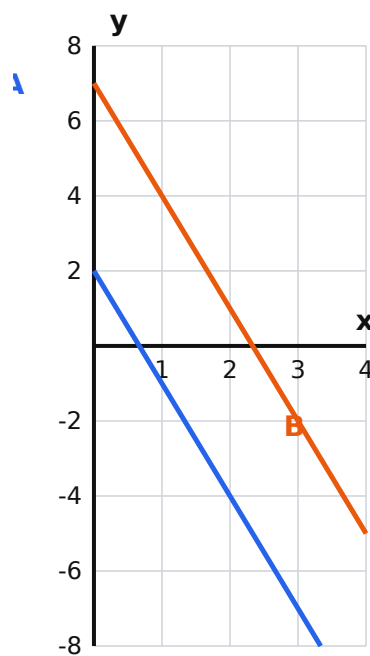
Exercise 11 - Elimination, opposite terms

Solve: $3x+2y=19$ and $5x-2y=5$.

Exercise 12 - Multiply both equations

Solve: $2x+3y=7$ and $3x+2y=8$.

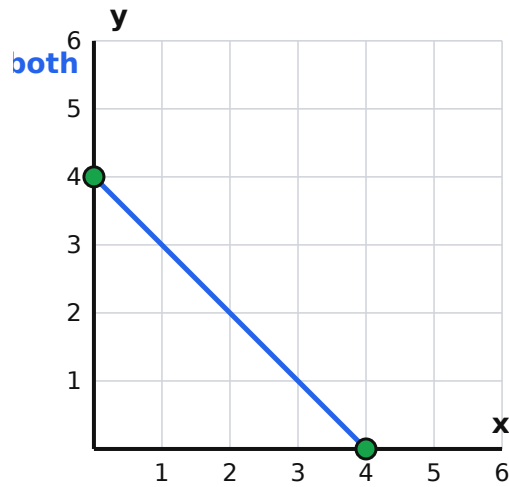
Exercise 13 - Parallel lines



A: $y = -3x + 2$ and B: $y = -3x + 7$.

Decide how many solutions the system $y = -3x + 2$ and $y = -3x + 7$ has, and justify your answer.

Exercise 14 - Same line



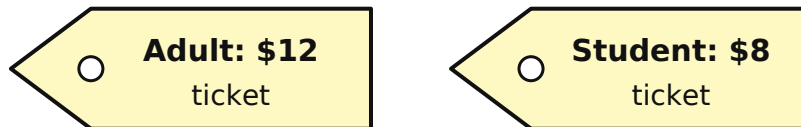
Two equations, one line.

How many solutions does $2x + 2y = 8$ and $x + y = 4$ have?

Exercise 15 - Classify

Classify $3x - y = 4$ and $6x - 2y = 8$ as one, none or infinitely many solutions.

Exercise 16 - School play tickets



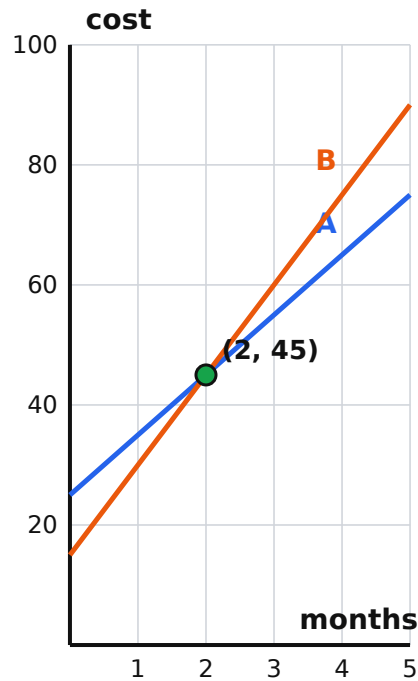
Prices for the school play.

Adult tickets cost \$12 and student tickets cost \$8. A school sold 50 tickets for \$480. How many of each kind were sold?

Exercise 17 - Bake sale

At a bake sale, muffins cost \$2 and cookies cost \$1.50. Ethan sold 40 items and collected \$65. How many muffins and cookies did he sell?

Exercise 18 - Gym plans



Total cost after x months.

Plan A costs \\$25 to join plus \\$10 per month. Plan B costs \\$15 to join plus \\$15 per month. After how many months do the plans cost the same? What is that cost?

Exercise 19 - Boat and current

Aisha's boat travels 18 miles per hour downstream and 12 miles per hour upstream. Find the boat's speed in still water and the speed of the current.

Exercise 20 - Coins

Priya has 30 coins, all dimes and quarters, worth \\$4.50. How many dimes and how many quarters does she have?

Exercise 21 - Interpret the point

Two lines cross at (4,7). Explain what this point means for the system.