

Grade 8 · Systems of Linear Equations · Worksheet

Common Core 8.EE.C.8a, 8.EE.C.8b, 8.EE.C.8c · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

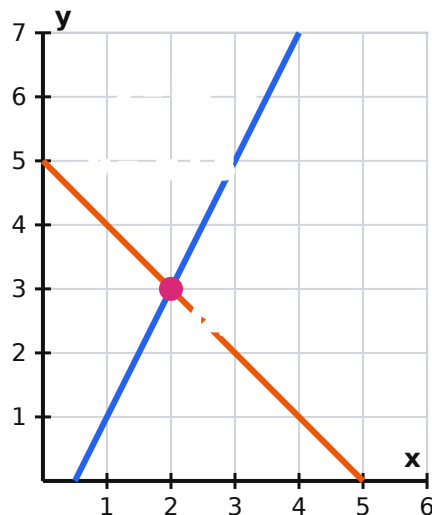
These problems practice Common Core standards 8.EE.C.8a, 8.EE.C.8b and 8.EE.C.8c. Check ordered pairs, read solutions from graphs, and solve systems by graphing, substitution and elimination. Then decide when a system has no solution or infinitely many.

The last six problems are word problems: write two equations, solve them, and check the answer in the story. Problems run from easiest to hardest.

Grade 8 Common Core: 8.EE.C.8a · 8.EE.C.8b · 8.EE.C.8c

Problem 1: Is it a solution?

Determine whether $(2,3)$ is a solution of the system $y = 2x - 1$ and $y = -x + 5$.



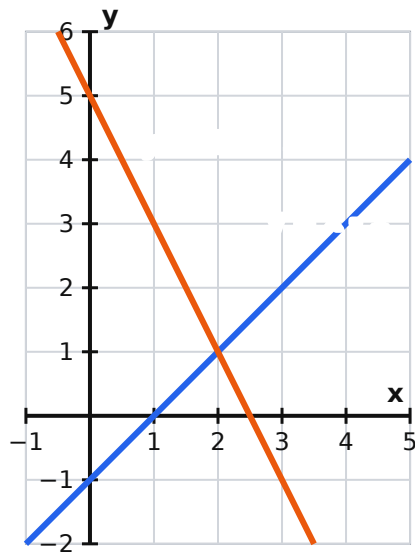
The point $(2,3)$ is marked on the graph.

Problem 2: Test an ordered pair

Determine whether $(4,1)$ is a solution of $x + y = 5$ and $x - y = 2$.

Problem 3: Read the intersection

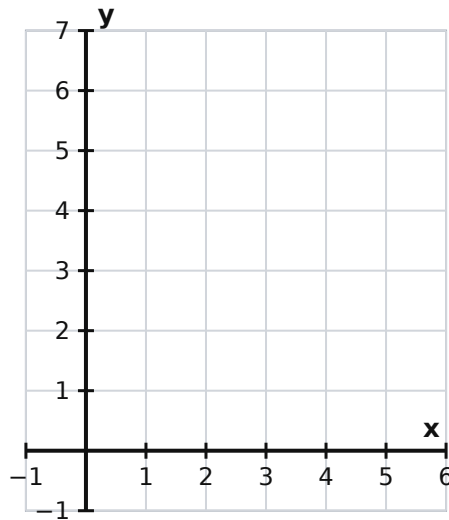
The graph shows $y = x - 1$ and $y = -2x + 5$. Find the solution of the system from the graph, then check it in both equations.



Two lines on one coordinate plane.

Problem 4: Solve by graphing

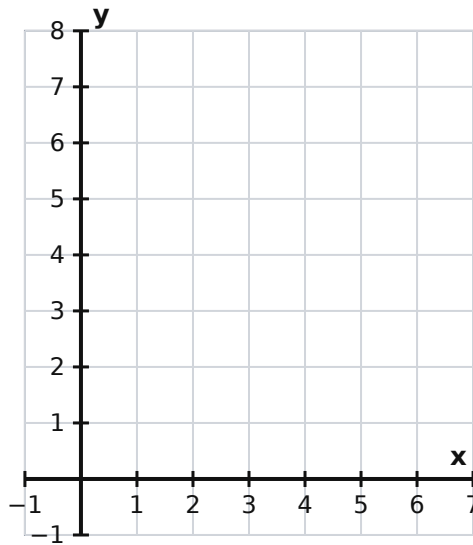
Solve the system by graphing: $y = x + 2$ and $y = -x + 4$.



Use this grid to graph both lines.

Problem 5: Graph two lines

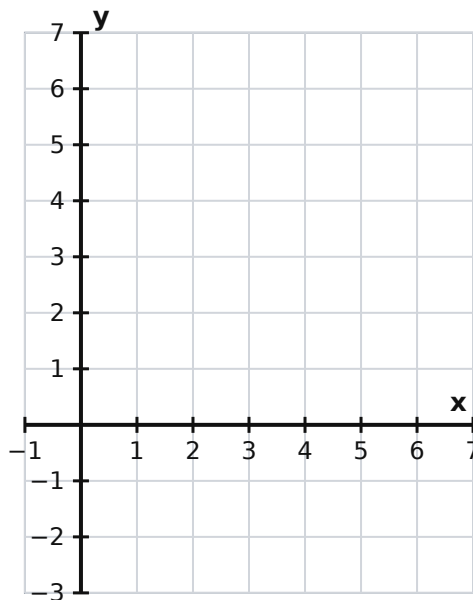
Solve the system by graphing: $y = 2x$ and $y = -x + 6$.



Use this grid to graph both lines.

Problem 6: Standard form on a grid

Solve the system by graphing: $x + y = 6$ and $x - y = 2$.



Use this grid to graph both lines.

Problem 7: Substitute a product

Solve by substitution: $y = 3x$ and $x + y = 12$.

Problem 8: Substitute a sum

Solve by substitution: $y = x + 4$ and $2x + y = 13$.

Problem 9: Two expressions for y

Solve the system: $y = 2x - 3$ and $y = x + 2$.

Problem 10: Substitute for x

Solve by substitution: $x = 2y + 1$ and $3x - y = 8$.

Problem 11: Add the equations

Solve by elimination: $x + y = 10$ and $x - y = 4$.

Problem 12: Opposite coefficients

Solve by elimination: $2x + y = 11$ and $3x - y = 9$.

Problem 13: Eliminate y

Solve by elimination: $3x + 2y = 19$ and $x - 2y = 1$.

Problem 14: Multiply one equation

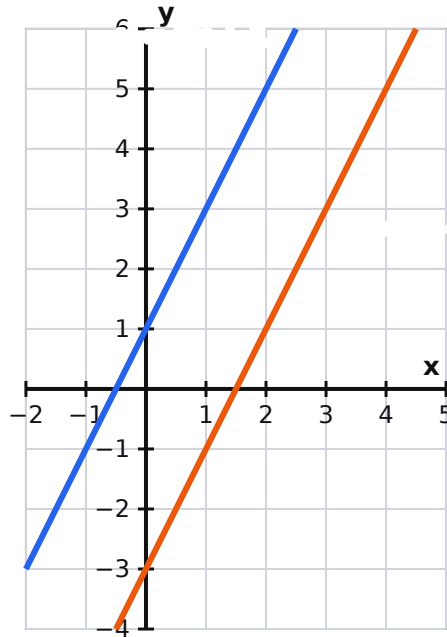
Solve by elimination: $2x + 3y = 13$ and $x + y = 5$.

Problem 15: Make y cancel

Solve by elimination: $3x + 2y = 12$ and $2x - y = 1$.

Problem 16: Parallel lines

How many solutions does the system $y = 2x + 1$ and $y = 2x - 3$ have? Explain using the graph.



The two lines on one coordinate plane.

Problem 17: No solution by inspection

Without graphing, explain why $3x+2y=5$ and $3x+2y=6$ have no solution.

Problem 18: Same line twice

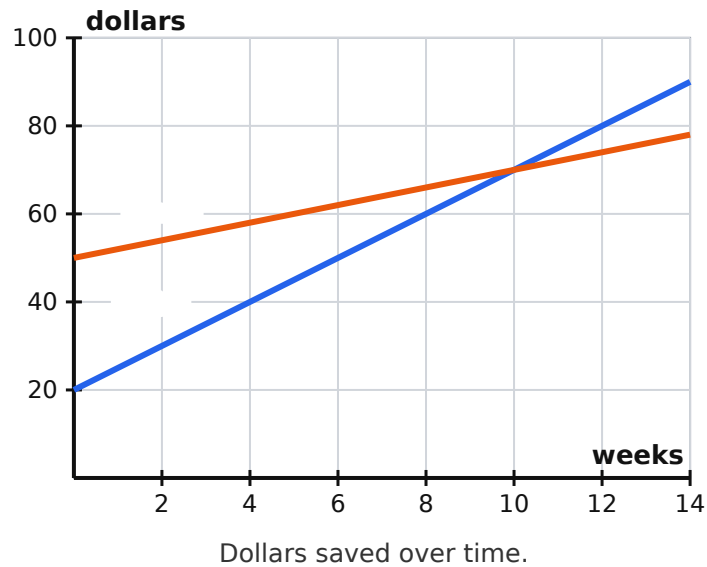
How many solutions does the system $y=3x-2$ and $6x-2y=4$ have?

Problem 19: Movie tickets

Adult tickets cost \$9 and child tickets cost \$6. Mei buys 8 tickets for \$57. Write a system and find how many adult and child tickets she bought.

Problem 20: Saving money

Maya has \$20 and saves \$5 each week. Jamal has \$50 and saves \$2 each week. The graph shows both. Write a system, then find when they have the same amount and how much that is.



Problem 21: Phone plans

Plan A costs \$20 a month plus \$0.10 per minute. Plan B costs \$10 a month plus \$0.20 per minute. For how many minutes is the monthly cost the same, and what is that cost?

Problem 22: Bake sale

At a bake sale, muffins cost \$3 and cookies cost \$2. Ethan sold 30 items and collected \$70. How many muffins and cookies did he sell?

Problem 23: Coins in a jar

Priya has 15 coins, all nickels and dimes, worth \$1.20 (120 cents). How many nickels and how many dimes does she have?

Problem 24: Two numbers

The sum of two numbers is 24 and their difference is 6. Find the numbers.