ALBERT

Name _____ Date _____

Solving Systems of Equations by Graphing Worksheet

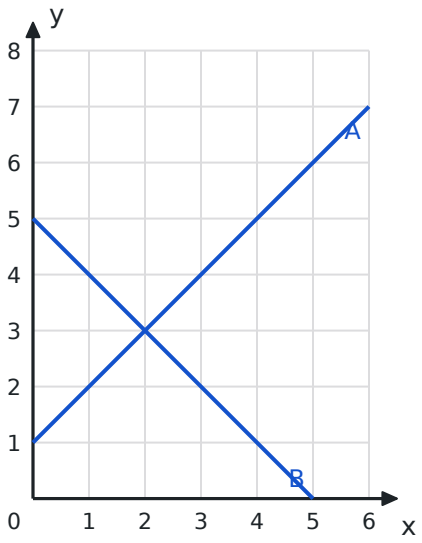
Grade 8 · Common Core 8.EE.C.8a

> Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.

Practice

Builds the skill step by step.

1. What is the solution of the system shown on the graph?



2. The solution of a system of two linear equations is...

   A. the y-intercept of the first line

   B. any point on either line

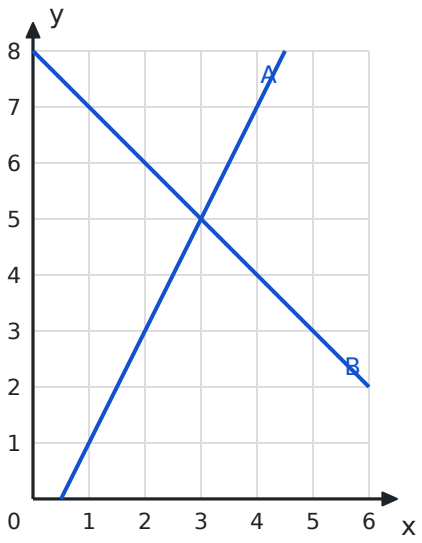
   C. the point where their graphs intersect

   D. the slope of both lines

3. Is (1, 4) a solution of the system $y = 2x + 2$ and $y = x + 3$?

4. Is (3, 5) a solution of the system $y = x + 2$ and $y = 3x - 2$?

5. What is the solution of the system shown on the graph?



6. The two lines in a system are parallel. How many solutions does the system have?

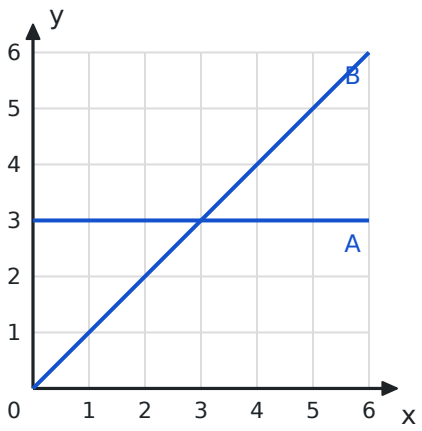
   A. 0

   B. 1

   C. 2

   D. Infinitely many

7. What is the solution of the system shown on the graph?



8. Which point is on both y = x + 4 and y = 2x + 1?

9. The two equations in a system graph as the same line. How many solutions does the system have?

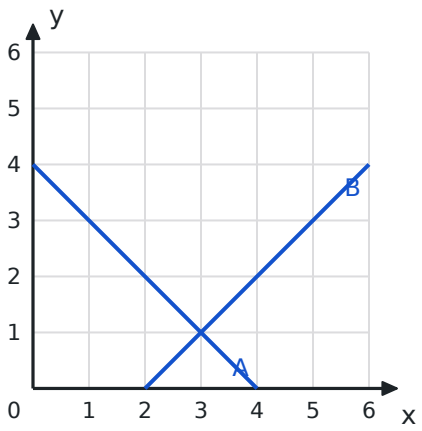
   A. 0

   B. 1

   C. 2

   D. Infinitely many

10. What is the solution of the system shown on the graph?



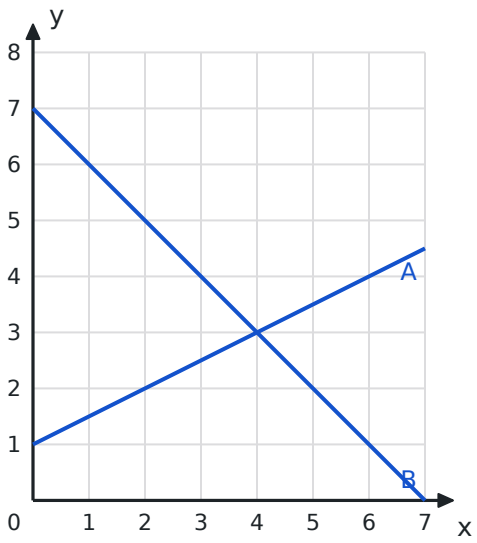
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On Level

Grade-level practice.

1. What is the solution of the system shown on the graph?



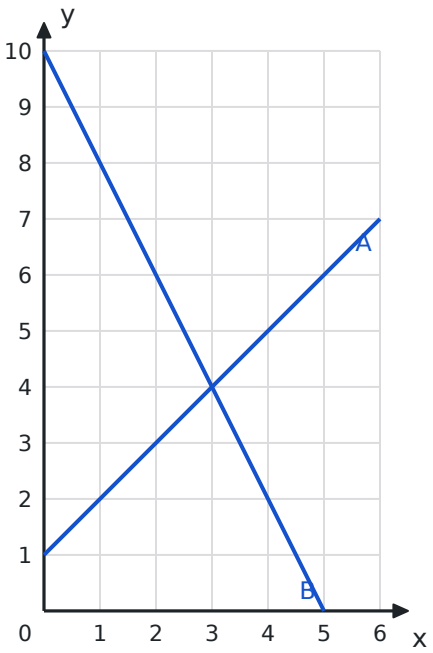
2. Is (−2, 5) a solution of the system y = −2x + 1 and y = x + 7?

3. How many solutions does the system y = 3x − 2 and y = 3x + 4 have? Write a number, or infinitely many.

4. Which point satisfies both 2x + y = 7 and x − y = 2?

5. Where do the graphs of $y = 2x + 1$ and $y = 4x - 3$ intersect?

6. The graph shows $y = x + 1$ and $y = -2x + 10$. What is the solution of the system?



7. Which system has exactly one solution?

   A. $y = 2x + 1$ and $y = -x + 4$

   B. $y = 2x + 1$ and $y = 2x - 3$

   C. $y = 2x + 1$ and $2y = 4x + 2$

   D. $y = 5$ and $y = 7$

8. How many solutions does the system $y = 2x + 3$ and $4x - 2y = -6$ have? Write a number, or infinitely many.

9. The point (4, 2) is on line A but not on line B. Is (4, 2) a solution of the system of lines A and B?

10. The table shows points on two lines. What is the solution of the system?

x	Line A: y	Line B: y
0	1	7
1	3	6
2	5	5
3	7	4

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Challenge

Multi-step and word problems that stretch it.

1. Line A passes through (0, 1) and (2, 5). Line B passes through (0, 7) and (3, 4). What is the solution of the system?

2. Find b so that the line $y = 3x + b$ passes through the solution of $y = x + 1$ and $y = -x + 5$.

3. Kim graphs $y = x + 2$ and $y = -x + 6$. She says the solution is (4, 6) because it is on the first line. What is the solution?

   A. (6, 0)

   B. (2, 4)

   C. (0, 2)

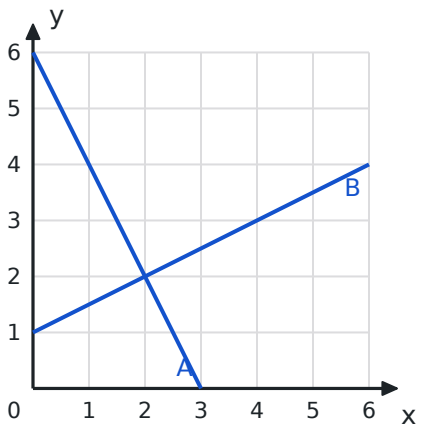
   D. (4, 6)

4. Taxi A charges $y = 2x + 3$ dollars for x miles. Taxi B charges $y = 1.5x + 5$ dollars. At how many miles do they cost the same, and what is that cost?

5. What is the solution of the system $y = 4$ and $x = -2$?

6. The system $y = mx + 1$ and $y = 3x - 5$ has no solution. Find m.

7. What is the solution of the system shown on the graph?



8. A system has the solution (1, 3). Which could be the system?

   A. $y = 2x + 1$ and $y = -x + 4$

   B. $y = x + 3$ and $y = 3x$

   C. $y = 3$ and $x = 3$

   D. $y = x + 1$ and $y = 2x$

9. At what point do $2x + y = 8$ and $y = 2x$ intersect?

10. How many points do $y = -x + 3$ and $y = -x + 3.5$ have in common?