ALBERT

Name _____ Date _____

Systems of Equations Worksheet

Grade 8 · Common Core 8.EE.C.8b

> Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.

Practice

Builds the skill step by step.

1. Solve the system: $y = 2x$ and $x + y = 9$

2. Solve the system: $y = x + 1$ and $2x + y = 10$

3. Solve the system: $x + y = 10$ and $x - y = 2$

4. Solve the system: $y = 3x - 2$ and $y = x + 4$

5. Solve the system: $x = 4$ and $2x + 3y = 17$

6. Solve the system: $2x + y = 11$ and $x - y = 4$

7. Which system has no solution?

   A. $x + y = 5$ and $x - y = 1$

   B. $x + y = 5$ and $x + y = 8$

   C. $y = x$ and $y = -x$

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

8. Solve the system: $y = -x + 7$ and $y = 2x + 1$

9. To solve $y = x + 3$ and $2x + y = 12$, Rosa substitutes for y. Which equation does she get?

   A. $2x + x = 12 + 3$

   B. $x + 3 = 12$

   C. $2(x + 3) + y = 12$

   D. $2x + (x + 3) = 12$

10. Solve the system: $3x + y = 14$ and $y = x + 2$

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On Level

Grade-level practice.

1. Solve the system: $3x + 2y = 16$ and $x - 2y = 0$

2. Solve the system: $2x + 3y = 12$ and $2x - y = 4$

3. Solve the system: $y = 4x - 5$ and $3x - y = 1$

4. Solve the system: $5x + 2y = 1$ and $3x + 2y = -1$

5. Solve the system: $x + 2y = 7$ and $3x - y = 14$

6. Solve the system: $4x - 3y = 10$ and $2x + y = 10$

7. Without solving, how many solutions does the system $2x + 4y = 6$ and $x + 2y = 3$ have?

   A. No solution

   B. Exactly one

   C. Infinitely many

   D. Exactly two

8. Solve the system: $y = 0.5x + 3$ and $y = 2x - 3$

9. Solve the system: $-x + 3y = 9$ and $x + y = 3$

10. Solve the system: $2x + 5y = -1$ and $x + 2y = 0$

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Challenge

Multi-step and word problems that stretch it.

1. Solve the system: $3x + 4y = 10$ and $2x - 3y = 1$

2. Solve the system: $4x + 3y = 5$ and $6x - 2y = 14$

3. Solve the system: $y = \frac{1}{2}x + 4$ and $y = -\frac{1}{4}x + 7$

4. Dev solves $x + y = 6$ and $x - y = 2$. He adds to get $2x = 8$, so $x = 4$, and then says $y = 4$. What is the solution?

   A. (4, 2)

   B. (4, 4)

   C. (2, 4)

   D. (8, 2)

5. Solve the system: $0.2x + 0.5y = 2.4$ and $x - y = 5$

6. (2, 3) is the solution of $ax + y = 7$ and $x - by = -4$. Find a and b.

7. Solve the system, or write no solution or infinitely many solutions: $5x - 2y = 3$ and $10x - 4y = 6$

8. Solve the system, or write no solution or infinitely many solutions: $3x + y = 4$ and $6x + 2y = 9$

9. The graphs of $y = x + 1$ and $y = -2x + 3$ cross between two grid points. Solve the system exactly.

10. Two numbers add to 25. Their difference is 7. Find the larger number and the smaller number.