
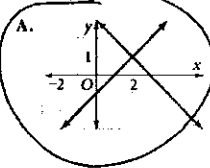
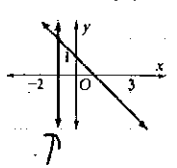


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Two or more linear equations form a **system of linear equations**. You can solve a system of linear equations by graphing. A point where all the lines intersect is a **solution of the system**.

6. Which graph shows the solution of the following system? $y = x - 1$
 $y = -x + 3$

A.  B. 

$y = \frac{1}{2}x - 1$
 $x = -1$

7. Is $(2, 5)$ a solution of the following system? Explain. $y = 2x + 1$

NO solution
 $5 = 2(2) + 1$
 $2(2) - 5 = 8$

$y = 2x + 1$
 $y = 2x + 8$
 $y = 2x - 8$

8. How many solutions does the following system have? Explain. $y = -\frac{1}{2}x + 2$
 $3x + 6y = 12$

Infinite Solutions

$3x + 6y = 12$
 $-3x$
 $6y = -3x + 12$
 $\frac{6y}{6} = \frac{-3x + 12}{6}$
 $y = -\frac{1}{2}x + 2$
 $y = -\frac{1}{2}x + 2$

7.2 Solving Systems of (Part 1) Equations by Substitution

- when one equation is already solved for a variable

Steps 1: substitute that expression into the other eq. and solve for the variable. (you will only have 1 type of variable if you did it right)

2: substitute that value into the original eq. you used (circled) and solve for the remaining variable.

3: ✓ answer

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Solve each system using substitution. Check your solution.

5. $y = 4x - 8$
 $y = 2x + 10$

} both eqs. are solved for y

$4x - 8 = 2x + 10$ ← (set them equal to each other)

$-2x$
 $2x - 8 = 10$
 $+8$
 $2x = 18$
 $\frac{2x}{2} = \frac{18}{2}$
 $x = 9$

$y = 2(9) + 10$
 $y = 28$
 $(9, 28)$

7. $m = 5p + 8$ $m = 5(-\frac{1}{3}) + 8$
 $m = -10p + 3$ $5(-\frac{1}{3}) + 8$

(step 1)

$5p + 8$	$-10p + 3$	$m = 6\frac{1}{3}$
$\frac{5p + 8}{+10p}$	$\frac{-10p + 3}{+10p}$	$m = \frac{19}{3}$
$15p + 8$	-3	$m = 6\frac{1}{3}$
$\frac{15p + 8}{+15}$	$\frac{-3}{+15}$	$m = 6\frac{1}{3}$
$15p + 8$	-3	$m = 6\frac{1}{3}$
$\frac{15p + 8}{+15}$	$\frac{-3}{+15}$	$m = 6\frac{1}{3}$

$p = -\frac{1}{3}$ $(6\frac{1}{3}, -\frac{1}{3})$
 alphabetical

9. $h = 6g - 4$
 $h = -2g + 28$

11. $y = x - 2$ ← already solved for y

$2x + 2y = 4$

$2x + 2(x - 2) = 4$ $y = 2 - 2$
 $y = 0$

$2x + 2x - 4 = 4$

$4x - 4 = 4$

$4x - 4 + 4 = 4 + 4$

$4x = 8$

$\frac{4x}{4} = \frac{8}{4}$

$x = 2$

$(2, 0)$

12. $c = 3d - 27$

$4d + 10c = 120$

$4d + 10(3d - 27) = 120$

$4d + 30d - 270 = 120$ $+270$

$34d = 390$

$d = \frac{390}{34} = 11\frac{8}{17}$

$c = 3(11\frac{8}{17}) - 27$

$c = 7\frac{2}{17}$ $(7\frac{2}{17}, 11\frac{8}{17})$

$(\frac{126}{17}, \frac{195}{17})$

$$14. \begin{aligned} m &= 4n + 11 \\ -6n + 8m &= 36 \end{aligned}$$

$$15. \begin{aligned} 7x - 8y &= 112 \\ y &= -2x + 9 \end{aligned}$$

$$34. \begin{aligned} y &= 2x \\ 6x - y &= 8 \end{aligned}$$

17. **Geometry** The length of a rectangle is 5 cm more than twice the width. The perimeter of the rectangle is 34 cm. Find the dimensions of the rectangle.

18. Suppose you have \$28.00 in your bank account and start saving \$18.25 every week. Your friend has \$161.00 in his account and is withdrawing \$15 every week. When will your account balances be the same?

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(1-11 odd, 13, 14)
separate sheet

1.	3.
5.	7.

9.	11.
13.	14.