Principles of Algebra Name/Date Clee / Today

WS 9A.1 – Solving Systems of Equations by Graphing

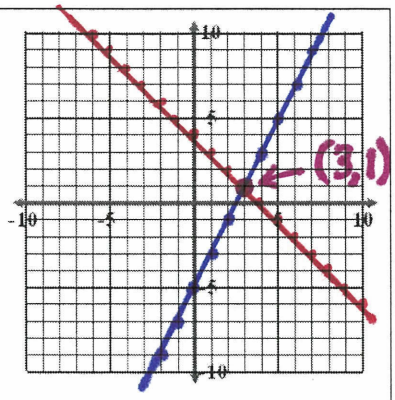
Solve each system of equations by graphing.

1. $\begin{cases} x+y=4 \\ 2x-y=5 \end{cases}$ → $y=-1x+4$, $y=2x-5$

$x+y=4$ → $y=-x+4$

$2x-y=5$ → $-y=-2x+5$ → $y=2x-5$

The solution is (3, 1).

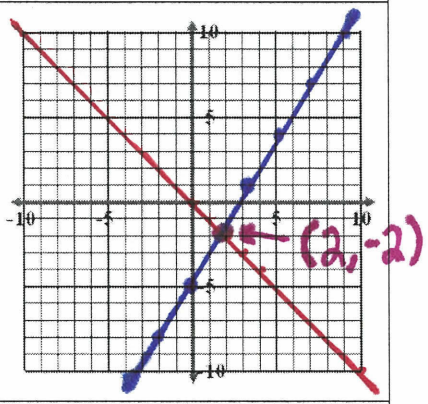


2. $\begin{cases} x+y=0 \\ 3x-2y=10 \end{cases}$ → $y=-1x+0$, $y=\frac{3}{2}x-5$

$x+y=0$ → $y=-1x$

$3x-2y=10$ → $-2y=-3x+10$ → $y=\frac{3}{2}x-5$

The solution is (2, -2).

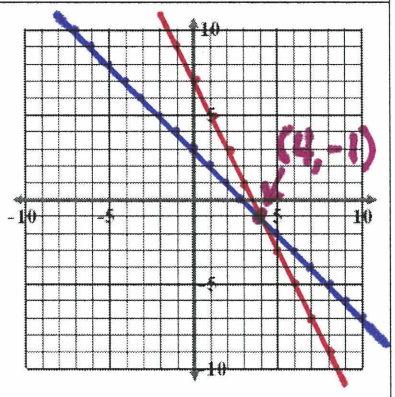


3. $\begin{cases} 2x+y=7 \\ x+y=3 \end{cases}$ → $y=-2x+7$, $y=-1x+3$

$2x+y=7$ → $y=-2x+7$

$x+y=3$ → $y=-x+3$

The solution is (4, -1).

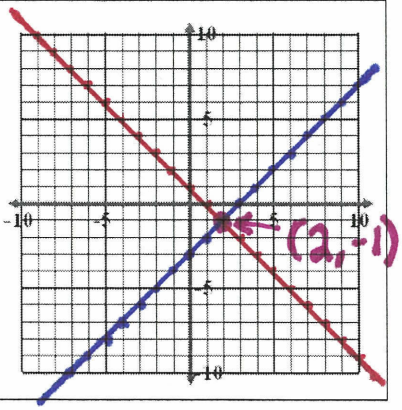


4. $\begin{cases} x+y=1 \\ 2x-2y=6 \end{cases}$ → $y=-x+1$, $y=x-3$

$x+y=1$ → $y=-x+1$

$2x-2y=6$ → $-2y=-2x+6$ → $y=x-3$

The solution is (2, -1).



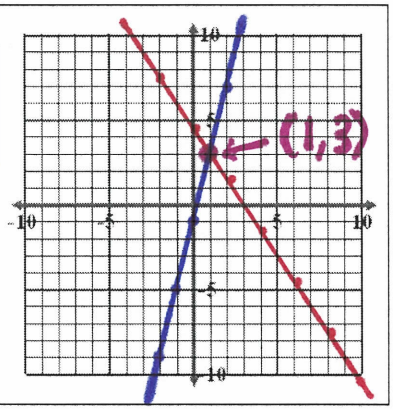
5. $\begin{cases} 3x+2y=9 \\ 4x-y=1 \end{cases}$ → $y=-\frac{3}{2}x+\frac{9}{2}$; $y=4x-1$

$3x+2y=9$ $\quad$ $4x-y=1$

$2y=-3x+9$ $\quad$ $-y=-4x+1$

$y=-\frac{3}{2}x+\frac{9}{2}$ $\quad$ $y=4x-1$

The solution is (1,3).



Use Algebra to determine whether the point **(1, 4)** (x, y) is a solution to each system.

6. $\begin{cases} y=x+3 \\ y=2x-2 \end{cases}$	7. $\begin{cases} y=3x+1 \\ y=-x+5 \end{cases}$	8. $\begin{cases} y=5x-1 \\ y=-2x+6 \end{cases}$
$y=x+3$ $\quad$ $y=2x-2$ $(4)\stackrel{?}{=}(1)+3$ $\quad$ $(4)\stackrel{?}{=}2(1)-2$ $4=4$ ✓ $\quad$ $4=2-2$ $4\neq 0$ ✗ (1,4) is not a solution.	$y=3x+1$ $\quad$ $y=-x+5$ $(4)\stackrel{?}{=}3(1)+1$ $\quad$ $(4)\stackrel{?}{=}-(1)+5$ $4=3+1$ $\quad$ $4=-1+5$ $4=4$ ✓ $\quad$ $4=4$ ✓ (1,4) is a solution.	$y=5x-1$ $\quad$ $y=-2x+6$ $(4)\stackrel{?}{=}5(1)-1$ $\quad$ $(4)\stackrel{?}{=}-2(1)+6$ $4=5-1$ $\quad$ $4=-2+6$ $4=4$ ✓ $\quad$ $4=4$ ✓ (1,4) is a solution.

Use Algebra to determine whether the point **(-2, 6)** (x, y) is a solution to each system.

9. $\begin{cases} y-x=8 \\ 4x-y=2 \end{cases}$	10. $\begin{cases} x+y=4 \\ x-y=8 \end{cases}$	11. $\begin{cases} 4x+y=-2 \\ y=-x+4 \end{cases}$
$y-x=8$ $\quad$ $4x-y=2$ $(6)-(-2)\stackrel{?}{=}8$ $\quad$ $4(-2)-(6)\stackrel{?}{=}2$ $6+2=8$ $\quad$ $-8-6=2$ $8=8$ ✓ $\quad$ $-14\neq 2$ ✗ (-2,6) is not a solution.	$x+y=4$ $\quad$ $x-y=8$ $(-2)+(6)\stackrel{?}{=}4$ $\quad$ $(-2)-(6)\stackrel{?}{=}8$ $4=4$ ✓ $\quad$ $-8\neq 8$ ✗ (-2,6) is not a solution.	$4x+y=-2$ $\quad$ $y=-x+4$ $4(-2)+(6)\stackrel{?}{=}-2$ $\quad$ $(6)\stackrel{?}{=}-(-2)+4$ $-8+6=-2$ $\quad$ $6=2+4$ $-2=-2$ ✓ $\quad$ $6=6$ ✓ (-2,6) is a solution.