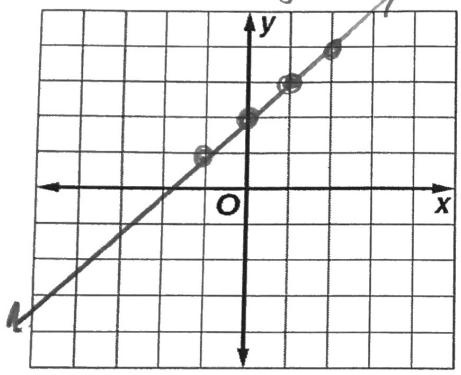
Day 16 – Classwork
Systems of Equations – Mixed Review

Name Key
Date _____ Period _____

Solving Systems of Equations by GRAPHING

Graph each system and determine the number of solutions that it has. If it has one solution, name it.

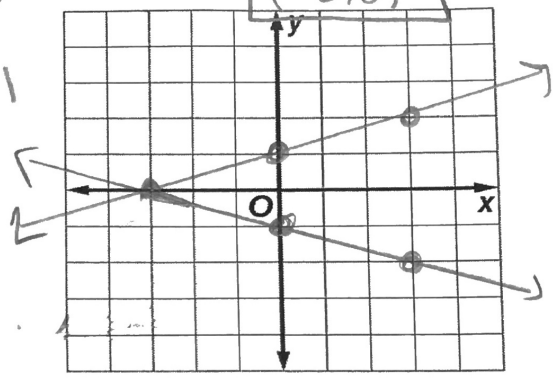
1. $y = x + 2$
$x - y = -2$ → $-y = -x - 2$, $y = x + 2$



same line!
Infinite Solutions

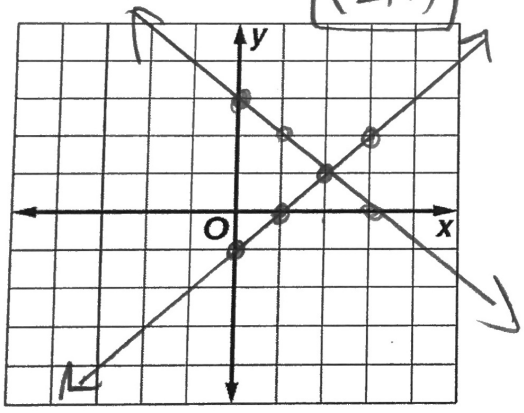
2. $x + 3y = -3$ → $\frac{3y}{3} = \frac{-x-3}{3}$, $y = -\frac{1}{3}x - 1$
$x - 3y = -3$ → $\frac{-3y}{-3} = \frac{-x-3}{-3}$, $y = \frac{1}{3}x + 1$

(-3,0)



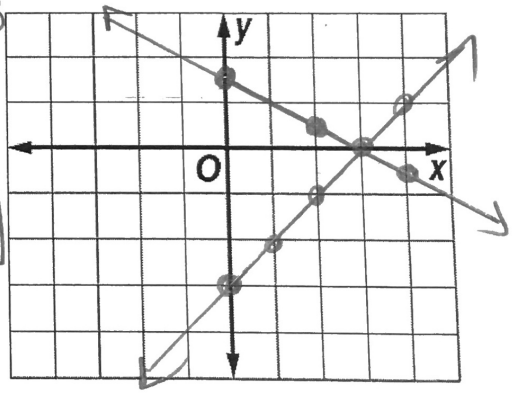
3. $y - x = -1$ $y = x - 1$
$x + y = 3$ $y = -x + 3$

(2,1)



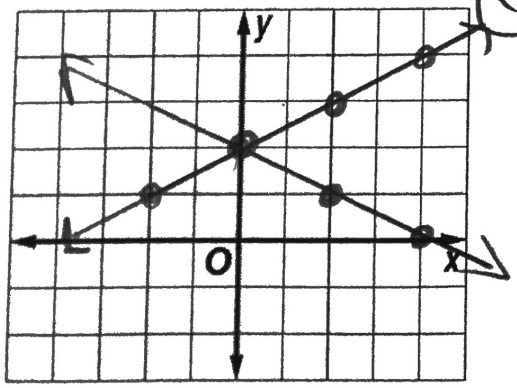
4. $x - y = 3$ → $-y = -x + 3$, $y = x - 3$
$x - 2y = 3$ → $-2y = -x + 3$, $y = \frac{1}{2}x - \frac{3}{2}$

(3,0)



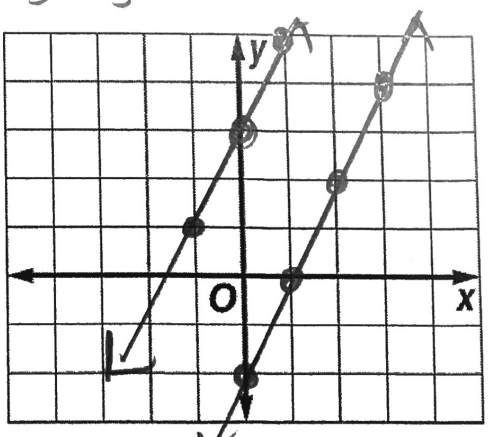
5. $x + 2y = 4$ $2y = -x + 4$, $y = -\frac{1}{2}x + 2$
$y = \frac{1}{2}x + 2$

(0,2)



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

No Solution



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Solving Systems of Equations by ELIMINATION

7. $2p - 3r = 6$
$-2p + 3r = -6$
$0 = 0$
Infinite Solutions

8. $6w - 8z = 16$
$-2(3w - 4z = 8)$ → $6w - 8z = 16$, $-6w + 8z = -16$
$0 = 0$
Infinite Solutions

9. $c + d = 6$
$c - d = 0$
$2c = 6$
$c = 3$
$3 + d = 6$
$d = 3$
$(3, 3)$

10. $2u + 4x = -6$
$-2(u + 2x = 3)$ → $2u + 4x = -6$, $-2u - 4x = -6$
$0 = -12$
NO solution

11. $3a + b = -1$
$-3a + b = 5$
$2b = 4$
$b = 2$
$3a + 2 = -1$
$3a = -3$
$a = -1$
$(-1, 2)$

12. $(2x + y = 6)2$ → $4x + 2y = 12$
$3x - 2y = 16$ → $3x - 2y = 16$
$7x = 28$
$2(4) + y = 6$ $x = 4$
$y = -2$
$(4, -2)$

13. $3y - z = -6$
$-3y - z = 6$
$-2z = 0$
$\frac{-2z}{-2} = \frac{0}{-2}$
$z = 0$
$3y - 0 = -6$
$y = -2$
$(-2, 0)$

14. $(c + 2d = -2)2$
$-2c - 5d = 3$
$2c + 4d = -4$
$-2c - 5d = 3$
$-d = -1$
$d = 1$
$c + 2(1) = -2$
$c = -4$
$(-4, 1)$

15. $(3r - 2t = 1)-2$
$(2r - 3t = 9)3$
$-6r + 4t = -2$
$6r - 9t = 27$
$-5t = 25$
$t = -5$
$3r - 2(-5) = 1$
$3r + 10 = 1$
$3r = -9$ $r = -3$
$(-3, -5)$

16. The sum of two numbers is 12. The difference of the same two numbers is –4. Find the numbers.

x = 1st #
y = 2nd #

$x + y = 12$
$x - y = -4$
$2x = 8$ → $x = 4$

$4 + y = 12$
$y = 8$

The numbers are 4 and 8

17. Twice a number minus a second number is –1. Twice the second number added to three times the first number is 9. Find the two numbers.

x = 1st #
y = 2nd #

$(2x - y = -1)2$ → $4x - 2y = -2$
$3x + 2y = 9$ → $3x + 2y = 9$
$7x = 7$
$x = 1$

$2(1) - y = -1$
$2 - y = -1$
$-y = -3$
$y = 3$

The numbers are 1 and 3