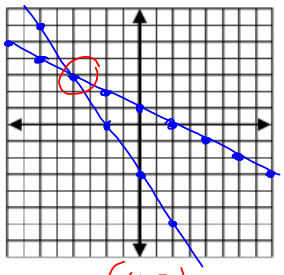
Chp 6 Mid-Chapter Review Name_____

1. Solve by graphing.

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

$$y = -\frac{3}{2}x - 3$$



Solution: (-4, 3)

2. Solve by graphing.

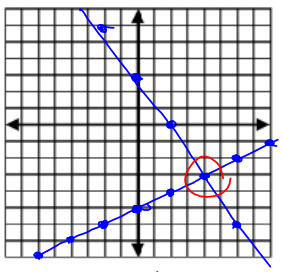
$$y = \frac{1}{2}x - 5$$

$$3x + 2y = 6$$

$-3x \quad -3x$

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

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



Solution: (4, -3)

3. Solve by graphing.

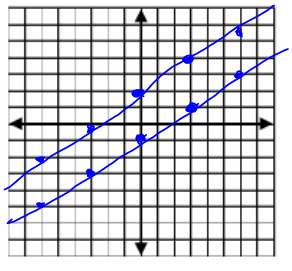
$$y = \frac{2}{3}x + 2$$

$$2x - 3y = 3$$

$-2x \quad -2x$

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

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



Solution: $\varnothing$

4. Solve by substitution.

$y = x - 4$

$y = -x + 2$

$x - 4 = -x + 2$

$+x \quad +x$

$2x - 4 = 2$

$+4 \quad +4$

$2x = 6$

$x = 3$

$y = x - 4 = 3 - 4 = -1$

Solution: (3, -1)

5. Solve by substitution.

$x = 9 - 2y$

$3x + 4y = 13$

$3(9 - 2y) + 4y = 13$

$27 - 6y + 4y = 13$

$27 - 2y = 13$

$-2y = -14$

$y = 7$

$x = 9 - 2(7)$

$= 9 - 14$

$= -5$

Solution: (-5, 7)

6. Solve by substitution.

$y = 3x - 7$

$3x - 2y = 2$

$3x - 2(3x - 7) = 2$

$3x - 6x + 14 = 2$

$-3x + 14 = 2$

$-14 \quad -14$

$\frac{-3x}{-3} = \frac{-12}{-3}$

$x = 4$

$y = 3(4) - 7$

$= 12 - 7 = 5$

Solution: (4, 5)

7. Solve by elimination.

$2x + 5y = 1$

$-2x + y = -19$

$6y = -18$

$\frac{6y}{6} = \frac{-18}{6}$

$y = -3$

$2x + 5(-3) = 1$

$2x - 15 = 1$

$2x = 16 \quad x = 8$

Solution: (8, -3)

8. Solve by elimination.

$-3(2x + 3y = 8)$

$6x + 9y = 24$

$-6x - 9y = -24$

$6x + 9y = 24$

$0 = 0$

Solution: Infinitely many solutions

9. Solve by elimination.

$4(2x + 3y = -14)$

$3(5x - 4y = 34)$

$8x + 12y = -56$

$15x - 12y = 102$

$23x = 46$

$x = 2$

$2(2) + 3y = -14$

$4 + 3y = -14$

$3y = -18 \quad y = -6$

Solution: (2, -6)

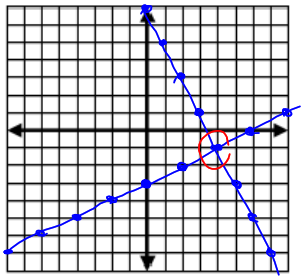
10. Solve by graphing.

$y = -2x + 7$

$x - 2y = 6$

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

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



Solution: (4, -1)

11. Solve by elimination.

$5(2x - 11y = 15)$

$-2(5x + 3y = 7)$

$10x - 55y = 75$

$-10x - 6y = -14$

$-61y = 61$

$y = -1$

$2x - 11(-1) = 15$

$2x + 11 = 15$

$2x = 4$

$x = 2$

Solution: (2, -1)

12. Solve by substitution.

$y = -2x + 7$

$3x + 2y = 11$

$3x + 2(-2x + 7) = 11$

$3x - 4x + 14 = 11$

$-1x + 14 = 11$

$-1x = -3$

$x = 3$

$y = -2(3) + 7$

$= -6 + 7$

$= 1$

Solution: (3, 1)

13. **CHECK #10**, by showing work below.

$y = -2x + 7$

$-1 = -2(4) + 7$

$-1 = -8 + 7$

$-1 = -1$ ✓

$x - 2y = 6$

$4 - 2(-1) = 6$

$4 + 2 = 6$

$6 = 6$ ✓

14. **CHECK #11**, by showing work below.

$2x - 11y = 15$

$2(2) - 11(-1) = 15$

$4 + 11 = 15$

$15 = 15$ ✓

$5x + 3y = 7$

$5(2) + 3(-1) = 7$

$10 + -3 = 7$

$7 = 7$ ✓

15. **CHECK #12**, by showing work below.

$y = -2x + 7$

$1 = -2(3) + 7$

$1 = -6 + 7$

$1 = 1$ ✓

$3x + 2y = 11$

$3(3) + 2(1) = 11$

$9 + 2 = 11$

$11 = 11$ ✓

Scrambled Answers for #1-9: infinite solns; (4,-3); (4,5); (8,-3); (3,-1); (-5,7); no solns; (-4,3); (2,-6)