Name _____ Chapter 1&2 Review

Solving Linear Equations

1) $\frac{1}{5}x - 4(2x+3) = 12$

2) $2(2x+3) - x = -4(5x+1)$

Solving Linear Inequalities (including compound inequalities)

3) $7x - 5 \le -2x + 6$

4) $2 < \frac{3}{2}(2x-8) \le 8$

5) $6x - 8 \le 16$ *or* $2\left(\frac{1}{2}x + 1\right) > 36$

6) $7x - 14 > 21$

Solving Absolute Value Equations and Inequalities

7) $|6x+10| - 2 = 10$

8) $\left|\frac{4}{5}x - \frac{3}{10}\right| < -5$

9) $\frac{|2x+2|}{8} > 12$

10) $\frac{2}{7}|4x-3| = 8$

Graph the following equations and inequalities. List two points that are solutions.

11) $y = x$

12) $3x + 5y = 15$

13) $y = 3$

14) $x > -2$

15) $f(x) \ge -\frac{2}{3}x - 1$

16) $3x + y \le 6$

Name _____ Chapter 2 Review

1) {(-3,3), (1,1), (4, -2), (3,1), (5,6),(-4,2)}

Domain: _____

Range: _____

Function or Relation

Reasoning _____

2) {(4,2), (-3,1), (2,4), (-3,2), (5,6), (7,2), (-2,6), (0, 7), (3, 5)}

Domain: _____

Range: _____

Function or Relation

Reasoning _____

Evaluate at the given value.

3) f(x)= x^2 - 10; f(3)

4) g(x) = -2x + 6x +3; g(-4)

5) $y = \frac{2}{3}x + 6$; x = -4

6) Explain the difference between a function and a relation.

Write the equation of the lines with the following properties.

7) m = 2 and b = -4.5

8) Parallel to $f(x) = \frac{1}{3}x - 5$ thru (2, 1)

9) Perpendicular to the line thru (0,14) and (6,2) and thru (3, 5)

10) Thru (2, -4) and (2, 6)

11) Perpendicular to y = $\frac{2}{3}x - 5$ and thru (8,0)

12) m = -4 and thru (3,7)

Name _____ Chapter 3 Review

Solve these by graphing (sketch the graph):

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

2. $y = 3x + 1$
   $y = -x + 5$

Solve using substitution:

3. $x + y = 10$
   $3x - 5y = 8$

4. $2x - 3y = 7$
   $8x + 6y = -12$

Solve using elimination

5. $2x - 5y = -19$
   $3x + 2y = 0$

6. $8x + 6y = 12$
   $-4x - 3y = -6$

Solve each of the following by the best method. (if it's graphing, sketch the graph)

7. $x + 2y = 0$
   $3x + 4y = 2$

8. $5x + y = 3$
   $10x + 2y = 0$

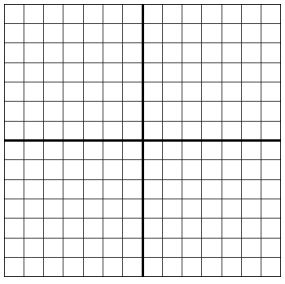
9. $y = -3x + 14$
   $y = x + 2$

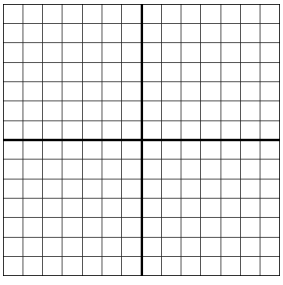
Graph the systems of inequalities and write two points that are solutions.

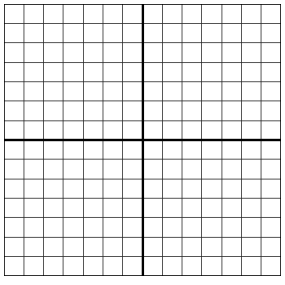
10. $y \geq x - 2$
    $y > -x + 2$

11. $y \leq -2x + 6$
    $y > 3x - 4$

12. $y \leq x - 3$
    $y < -2x + 1$

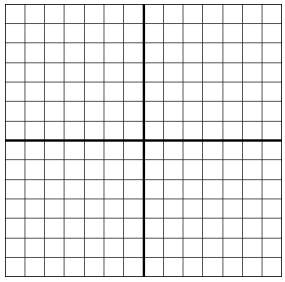






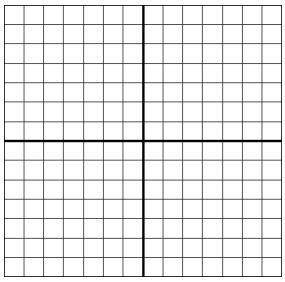
13. $y \geq 2$

$y < -1/3\ x + 2$



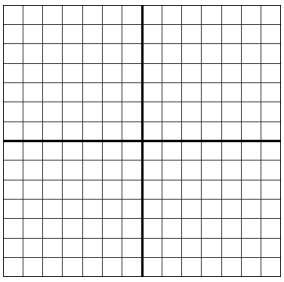
14. $3x + y \leq 5$

$-\ x + y > 2$



15. $y + 2x < 6$

$x \leq 4$



Applications

16. You are planning on starting a business and need to pick a company to work with for your office supplies. The first company that you are considering charges a $200 fee and then $30 per order. The second company charges a $150 fee and then $35 per order. At which point should you switch companies?

17. You want to buy an aquarium and stock it with goldfish and angelfish. The pet store sells goldfish for $.40each and angelfish for $4 each. You want to spend $44 and you want to have 38 fish total. How many of each type of fish should you get?

18. Blue Mountain rents snowboards for $65 and skis for $80. One weekend they rented to 32 people for a total of $2275. How many of each type of equipment did they rent?

Name _____ Chapter 6 Review

Simplify the following polynomial expressions.

1. $4^3 \cdot 4^6$

2. $\dfrac{4x^3y^{-5}}{10x^7y^2}$

3. $\left(3x^2+4x-5\right)+\left(x^2-7x+1\right)$

4. $\left(2x^2-5\right)-\left(4x^2-x-6\right)$

5. $\dfrac{(2x^3)^4 5y^4 z^o}{20x^{-4}y^9}$

6. $\left(x+3\right)\left(x^2-6x+1\right)$

16. $y^4 \cdot y^{10}$

17. $\left(x^7\right)^3$

18. $\left(2x^2\right)^3\left(5xy^3\right)^2$

19. $\dfrac{3x^9y^{-2}}{x^{-7}y^2}$

20. $\dfrac{50x^{-3}y^5}{2x^5y^{-9}}$

21. $\dfrac{(2x^3)^0 5y^2}{(2x)^{-3}y^{-5}z^{-3}}$

22. $\left(x^2+2x-1\right)-\left(3x^2+5x+7\right)$

20. $\left(x^2-4x+3\right)+\left(5x-3\right)$

21. $\left(x-2\right)\left(x^2-5x+1\right)$

22. $4x+3\left(2x^2-5x+1\right)$

Factor the following polynomials using any method possible.

14. x^2-3x-4

15. $x^5-4x^3-2x^2+8$

29. x^2-3x+2

30. $2x^2-3x-5$

31. $2x^3-x^2+6x-3$

33. x^4-16

34. $25x^2-16$

35. $3x^4-x^2-2$

36. $x^3-5x^2+10x-50$

37. $3x^3+9x^2-12x$

39. $75x^{10}-3x^8$