Name:_____

MATH 3 Final Review UNIT 2: Solving Equations and Inequalities

1. (a) Write the formula for the perimeter of a rectangle:

   (b) Re-arrange the formula and solve for w (width):

Solve:

2. $\frac{8x+10}{-7} > 2$

3. $-24 < 3x - 9 \leq 12$

4. $7x - 12 \leq 24 - 2x$

5. $|-4+5x| = 16$

6. $3|-8x| + 8 = 80$

7. $\frac{|7x+4|}{8} = 3$

8. $|x-2| < 8$

9. $|x+5| - 6 \leq -5$

10. $9|3x-2| + 6 > 51$

11. $10 + \sqrt{10m-1} = 13$

12. $8 = \sqrt{x-5} + 10$

13. $\sqrt[3]{x^2-1} = 2$

14. $x = \sqrt{-70+17x}$

15. $2(x-5)^{\frac{3}{2}} = 54$

16. $0.5z^{\frac{1}{4}} = 2$

Solve each equation

17. $-3y + 28 = y^2$

18. $6x^2 = 8x$

19. $7x - 3x^2 = 85 + 2x^2 + 2x$

20. $\frac{t^2}{20} + 8 = 15$

21. $3(x + 2)^2 + 10 = 3$

22. $4x^2 + 12x + 56 = 0$

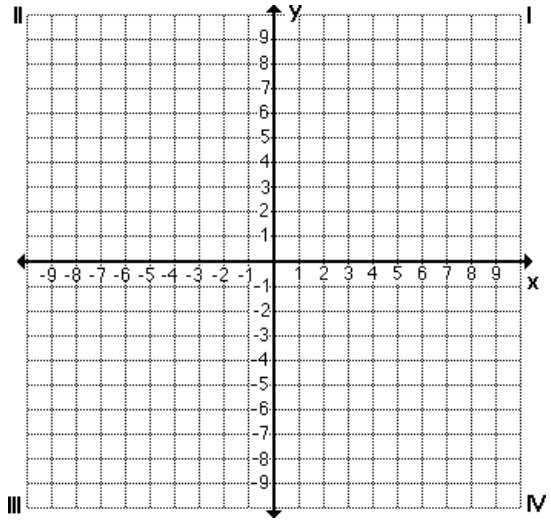
23. $4x^2 + 11x + 3 = -3$

24. Find the x-intercepts of $f(x) = 3x^2 - 8x + 5$

25. Find the inverse of the function $y = \frac{3}{5}x - 2$.

26. Let $f(x) = 4x - 2$ and $g(x) = \frac{x+2}{4}$.
Are $f(x)$ and $g(x)$ inverses of each other?

27. Solve the equation $|x - 4| + 2 = x^3 - 4$ by graphing. Check your solution by plugging it back into the original equation.



28. Let $f(x) = 2x - 3$, $g(x) = 2x^3 - 5x + 2$, and $h(x) = x^2$. Find the following:

a. $f(x) + h(x)$

b. $h\big(g(1)\big)$

c. $h\big(f(x)\big)$

d. $f(3 + h) - f(3)$