

11.3.5: Algebra Homework

11-29. For each function, find the inverse function.

a. $f(x) = \frac{x}{3} - 2$

b. $g(x) = \frac{1}{2}x + 5$

11-30. Solve the equations and inequalities below, if possible.

a. $\sqrt{x-1} + 13 = 13$

c. $|3x - 2| \leq 2$

e. $(4x - 2)^2 \leq 100$

b. $6|x| > 18$

d. $\frac{4}{5} - \frac{2x}{3} = \frac{3}{10}$

f. $(x - 1)^3 = 8$

11-127. Solve each inequality algebraically. Then represent your solution on a number line.

a. $5x - 7 \geq 2x + 5$

c. $x^2 \leq -4x + 5$

b. $6x - 29 > 4x + 12$

d. $|2x - 7| > 31$

11-128. Solve the quadratic equation below three times: once by completing the square, once by factoring and using the Zero Product Property, and once by using the Quadratic Formula. Make sure you get the same answer using all methods!

$$x^2 + 14x + 40 = -5$$

11-129. Graph the system of inequalities below and shade its solutions.

$$y \geq \frac{2}{3}x - 7$$

$$y < -x + 4$$

11-132. **Multiple Choice:** For which of the following equations or inequalities is $x = -1$ a solution?

a. $(x + 3)^2 > 4$

b. $\frac{x+5}{2} = 2x^2$

c. $\sqrt{x+6} = 25$

d. $x^2 + 5x + 6 = 0$

11-133. Find the equation of the line parallel to $3x + 2y = 10$ that goes through the point $(4, -7)$.

11-134. James used the Distributive Property and got $6m - 12$. Find an expression that he could have started with.

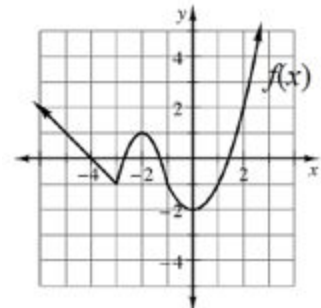
11-135. Use the graph of $f(x)$ at right to find the following values:

a. $f(1)$

b. $f(-6)$

c. $f(0)$

d. $f(-3)$



11-136. Multiply the expressions below using generic rectangles.

a. $(5m - 1)(m + 2)$

b. $(6 - x)(2 + x)$

c. $(5x - y)^2$

d. $3x(2x - 5y + 4)$