

Unit 4 Qualifier

Objective 1: Solving Systems of Equations with two variables.

1.
$$\begin{cases} 2x - y = 7 \\ 6x - 3y = 14 \end{cases}$$

3.
$$\begin{cases} 5x + 2y = -8 \\ 4x + 3y = 2 \end{cases}$$

2.
$$\begin{cases} 5x + 2y = 12 \\ -6x - 2y = -14 \end{cases}$$

Objective 2: Solve quadratic equations by square root

Solve for the given variable

1. $8 = \frac{1}{2}x^2$

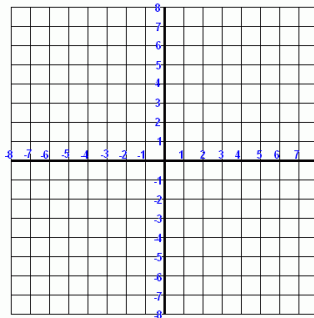
3. $72 = 2(x+4)^2$

2. $3125 = 5x^2$

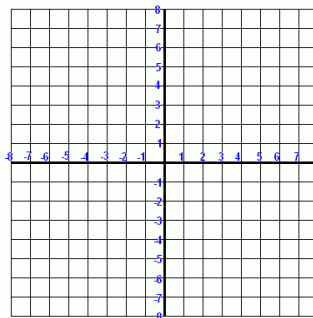
4. $27 = \frac{1}{3}(x - 5)^2$

Objective 3: Stretch and Compression

1. Graph $y = 2|x| - 4$



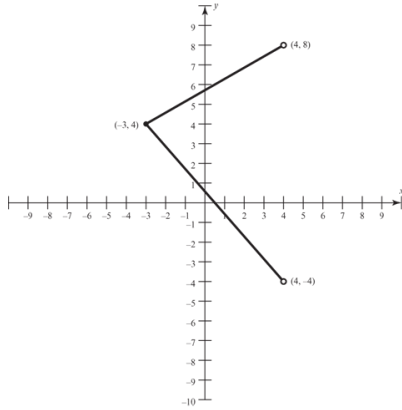
2. Graph the equation $y = \frac{1}{4}|x|$. Then describe the transformation from the parent function $f(x) = |x|$.



3. Describe how is $y = 2(x + 5)^2$ related to the the parent function, $y = x^2$?

Distributive Practice

1. If y varies directly with x and $y = 18$ when $x = 6$, what is the constant of variation? Find the value of y when $x = 10$.
2. Identify the Domain and Range



3. Solve and check for extraneous solutions: $2|4y + 1| = 4y + 10$
4. Write the equation of a line that is perpendicular to $y = -\frac{4}{5}x - 3$ and runs through point $(10, -3)$ in STANDARD form.
5. The first half of a play is 35 minutes longer than the second half of the play. If the entire play is 155 minutes long, how long is the first half of the play? Write an equation and solve the problem.