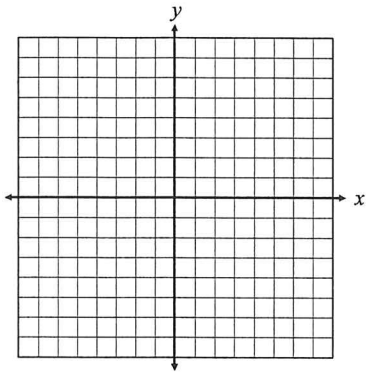
Piecewise Functions

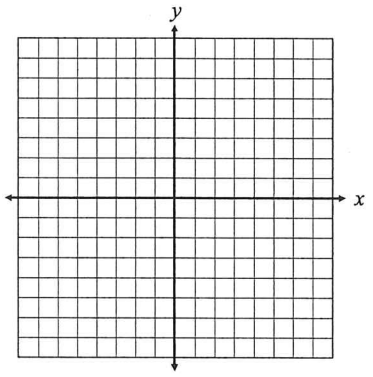
Date:

Graph each function. State the domain and range.

1. $f(x)=\begin{cases}-3x-5 & \text{if } x<-2\\ -x+1 & \text{if } x\geq -2\end{cases}$



2. $g(x)=\begin{cases}-2 & \text{if } x<-4\\ \frac{3}{2}x+1 & \text{if } -4<x<2\\ x & \text{if } x\geq 2\end{cases}$

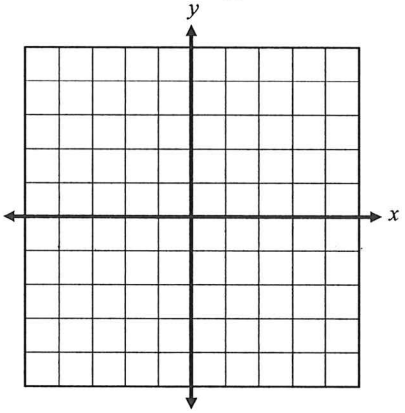


Greatest Integer Functions

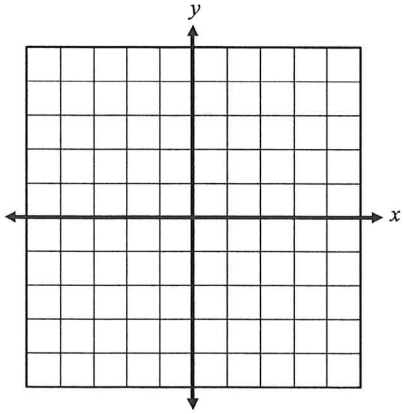
Date:

Graph each function. State the domain and range.

1. $f(x)=[\![x+5]\!]$



2. $f(x)=2[\![x-3]\!]+1$

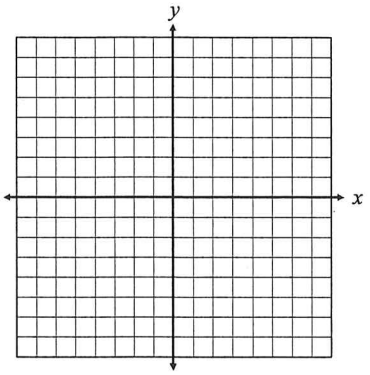


Absolute Value Functions

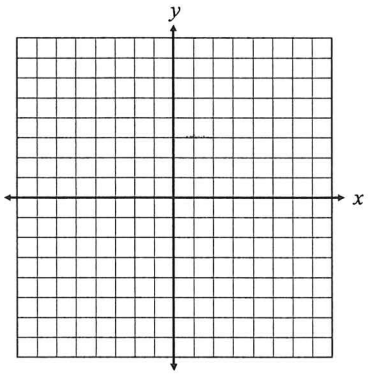
Date:

Graph each function using a table of values.

1. $f(x) = -2|x+4|$



2. $f(x) < |3x-5|$



Parent Functions & Transformations

Date:

Identify the parent function for each function family, then sketch the graph.

1. Linear

2. Absolute Value

Describe the transformations in each function.

3. $f(x) = |x+8|$

4. $f(x) = -|x|-3$

5. $f(x) = 4|x-1|$

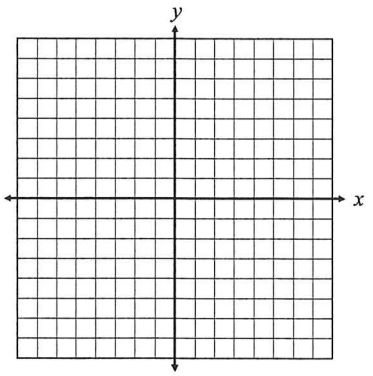
6. $f(x) = \frac{4}{5}|x+5|+2$

Vertex Form of an Absolute Value Function

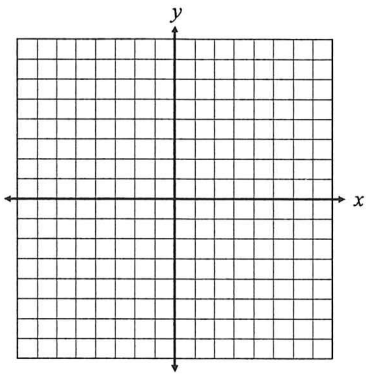
Date:

Give the vertex of each function, then graph.

1. $f(x) = |x+3| - 6$



2. $f(x) \geq -\frac{2}{3}|x| + 5$

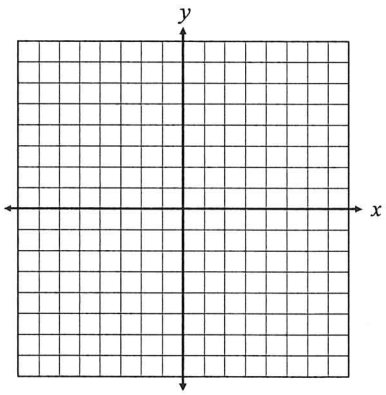


Quadratic Functions: Standard Form

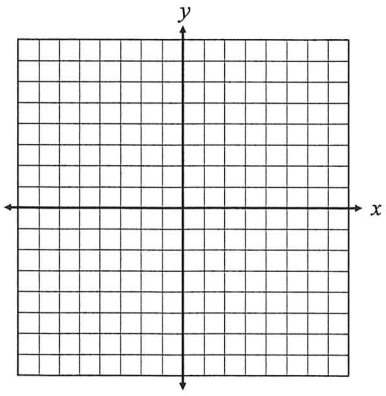
Date:

Give the axis of symmetry and vertex of each function. Graph using a table of values.

1. $f(x) = x^2 + 6x + 8$



2. $f(x) \leq -2x^2 - 4x + 5$

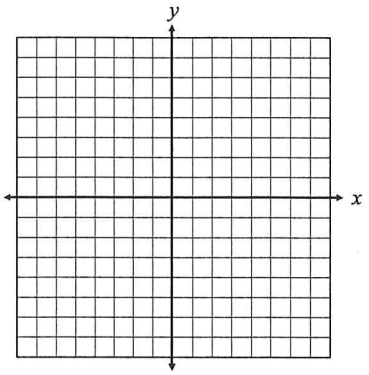


Quadratic Functions: Vertex Form

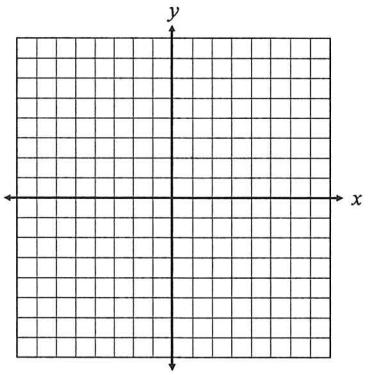
Date:

Give the axis of symmetry and vertex of each function. Graph using a table of values.

1. $f(x) = (x-2)^2 - 7$



2. $f(x) > -3(x+1)^2 + 4$

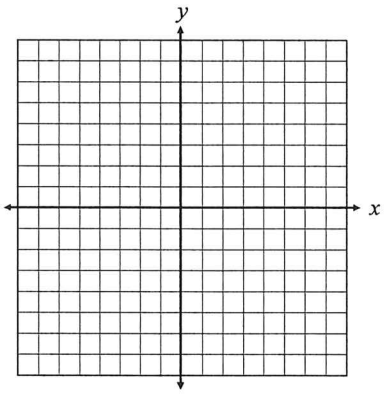


More Piecewise Functions Practice

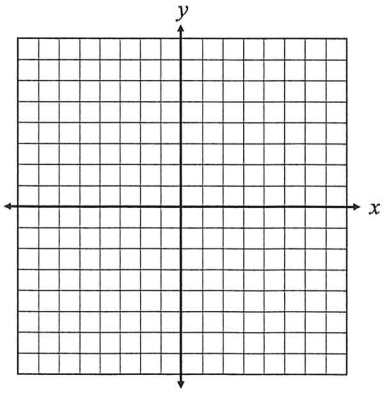
Date:

Graph each function. State the domain and range.

1. $f(x) = \begin{cases} |x-1| - 5 & \text{if } x < 3 \\ -2x + 7 & \text{if } x \geq 3 \end{cases}$



2. $f(x) = \begin{cases} x^2 - 1 & \text{if } x < -1 \\ -x + 4 & \text{if } x > -1 \end{cases}$



Converting Standard Form to Vertex Form

Date:

Write each function in vertex form. Identify the vertex.

1. $f(x) = x^2 - 8x + 19$

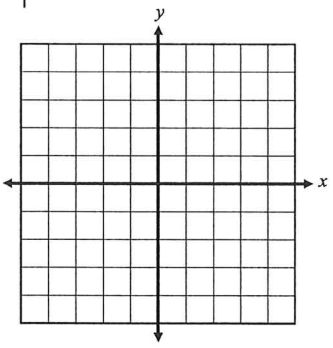
2. $f(x) = -2x^2 - 4x + 14$

Function Families Review

Date:

Graph each function and give its characteristics.

1. $f(x) = -|x+2| + 5$



Parent Function: _____

D: _____; R: _____

Number of roots: _____

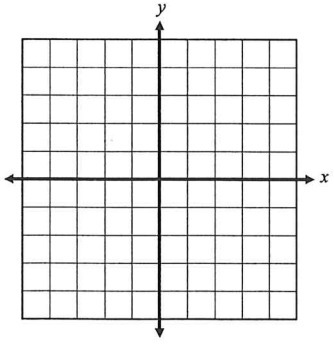
End Behavior: As $x \to \infty$, $f(x) \to$ _____

As $x \to -\infty$, $f(x) \to$ _____

Increasing Interval: _____

Decreasing Interval: _____

2. $f(x) = \frac{6}{5}x - 1$



Parent Function: _____

D: _____; R: _____

Number of roots: _____

End Behavior: As $x \to \infty$, $f(x) \to$ _____

As $x \to -\infty$, $f(x) \to$ _____

Increasing Interval: _____

Decreasing Interval: _____