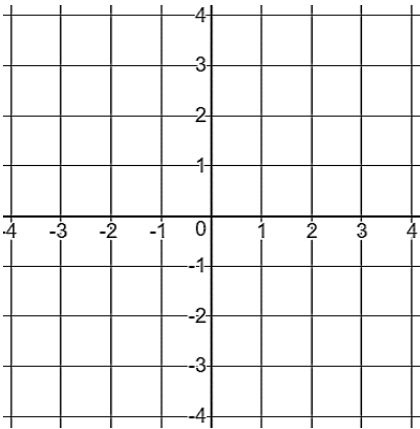


Graph each function then state the vertex, axis of symmetry, domain, and range

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



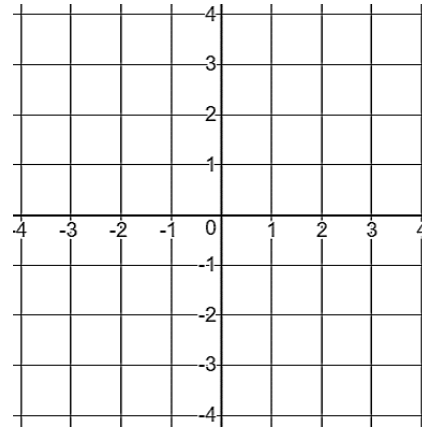
Vertex:

Axis of Symmetry:

Domain:

Range:

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



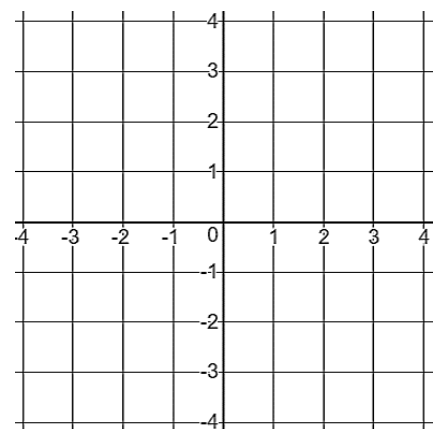
Vertex:

Axis of Symmetry:

Domain:

Range:

3. $f(x) = -|x+2| + 2$



Vertex:

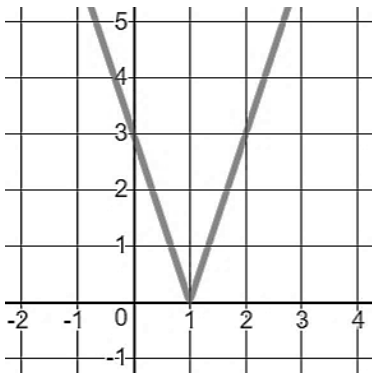
Axis of Symmetry:

Domain:

Range

For each graph, write the equation, find the average rate of change, and where the function is increasing

4.

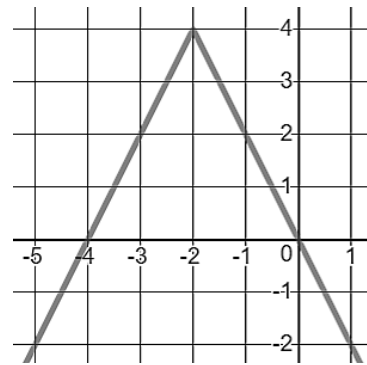


Equation:

Average ROC over the interval $x \in [1, 2]$:

State the interval where $f(x)$ is increasing:

5.



Equation:

Average ROC over the interval $x \in [-1, 2]$:

State the interval where $f(x)$ is increasing:

Solve each equation for x .

6. $2 - |2x - 3| = 1$

7. $4|2 + 4x| = 8$

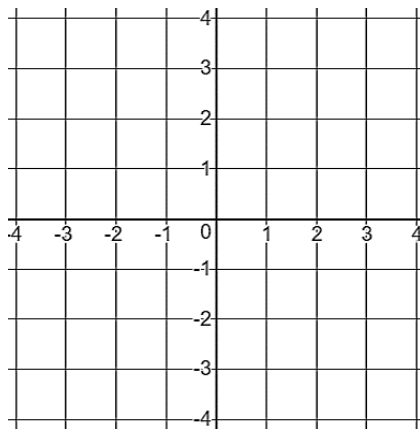
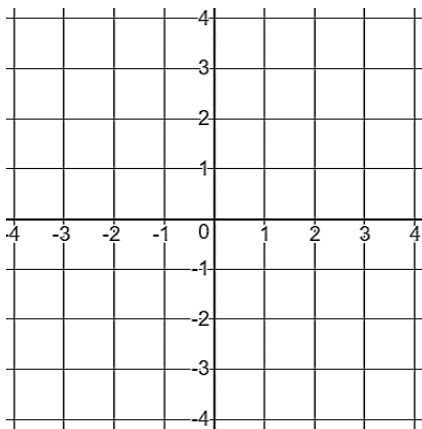
8. $|4 + 2x| - 3 = 9$

7. Lisa's school is selling wrapping paper as a fundraiser. For up to 30 wrapping paper rolls, it cost \$5 per roll and \$3 for shipping. 31 to 60 rolls cost \$4 each with \$3 for shipping. More than 60 rolls cost \$3 per roll with no shipping fee. Write a piecewise defined function for the cost of wrapping paper.

Graph each piecewise defined function and then state the domain and range

8. $f(x) = \begin{cases} 3, & x \leq -3 \\ x+2, & x > -3 \end{cases}$

9. $f(x) = \begin{cases} -x+2, & x < -1 \\ 2x+1, & x \geq 0 \end{cases}$



Over what intervals is $f(x)$ increasing:

What is the average ROC over the interval $x \in [0,1]$

Write the equation for the piecewise function below

10.

