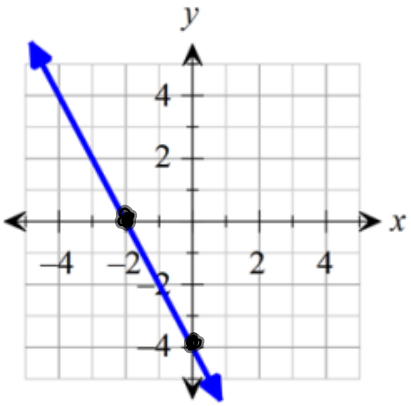
SM2 Unit 2 Analyzing Functions Test Review

Find the intercepts of the given functions visually or algebraically. Write your answers as ordered pairs. You must show all your necessary work for full credit.

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



x-intercept: $(-2, 0)$

y-intercept: $(0, -4)$

2. $6x - 5y = 30$

To find x-int
Let y=0

$6x - 5(0) = 30$

$\frac{6x}{6} = \frac{30}{6}$

$x = 5$

To find yint Let x=0

$6(0) - 5y = 30$

$\frac{-5y}{-5} = \frac{30}{-5}$

$y = -6$

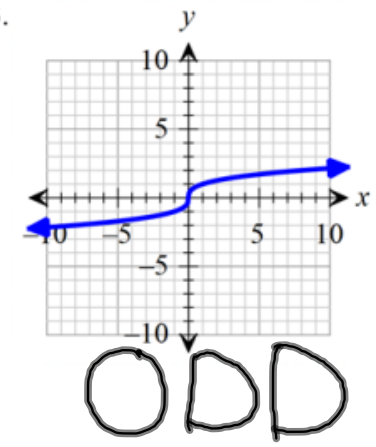
x-intercept: $(5, 0)$

y-intercept: $(0, -6)$

Match each of the following graphs with the type of symmetry that best describes it:

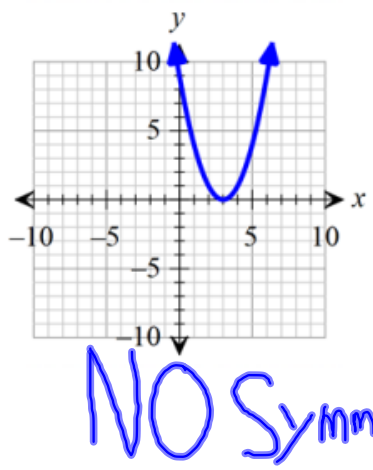
A. Even; Symmetric with respect to the *y*-axis
B. Odd; Symmetric with respect to the origin
C. No symmetry

3.



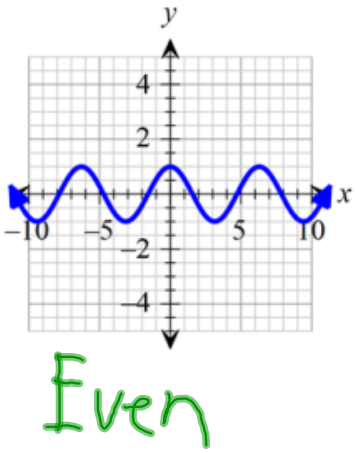
ODD

4.



NO Symmetry

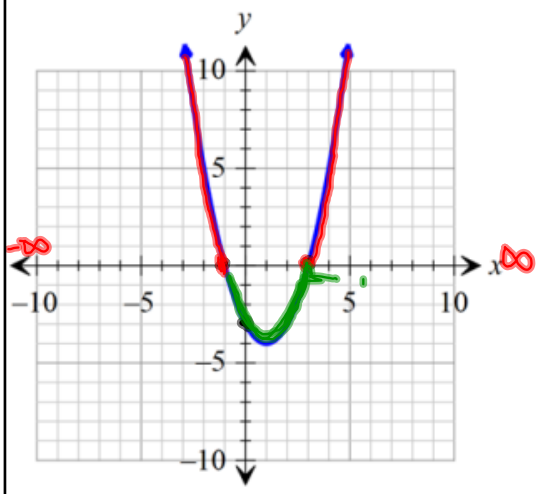
5.



Even

Use the graph to find the domain, range, and intercepts. Then color the positive and negative section(s). Write the positive and negative intervals in interval notation.

6.



x values

Domain: $(-\infty, \infty)$ left to right

y values

Range: $[-4, \infty)$ bottom to top

x-intercepts: $(-1,0)$ $(3,0)$ *y*-intercept: $(0,-3)$

The positive section(s) are red color.

Positive interval(s): $(-\infty,-1) \cup (3,\infty)$

use x-values

The negative section(s) are green color.

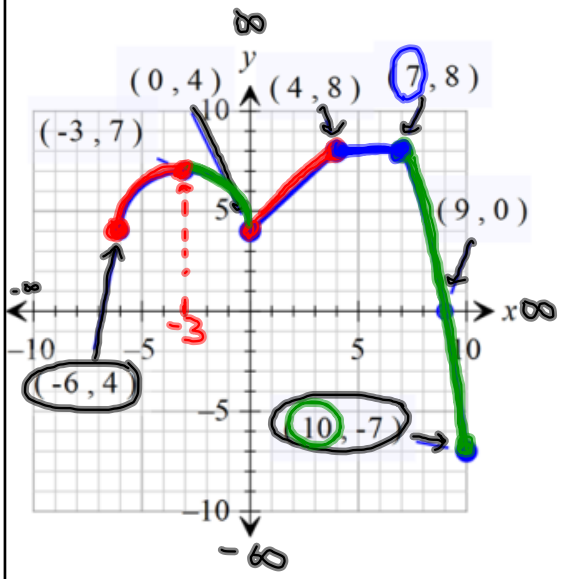
Negative interval(s): $(-1, 3)$

use x-values

Color the increasing, decreasing, and constant section(s). Write the intervals where the function is increasing, decreasing, and constant in interval notation.

use x-values
x-numbers

7.



The increasing section(s) are red color.

Increasing interval(s): $(-6,-3) \cup (0,4)$

x-values

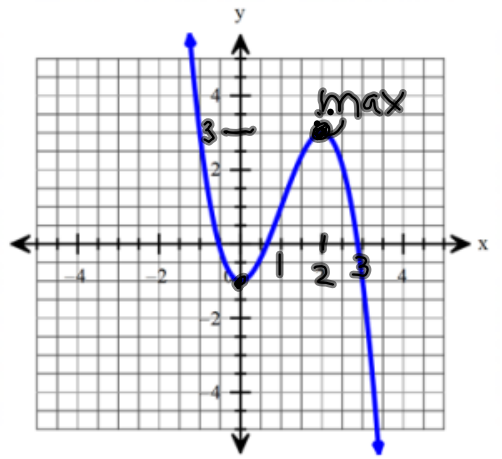
The decreasing section(s) are green color.

Decreasing interval(s): $(-3,0) \cup (7,10)$

The constant section(s) are blue color.

Constant interval(s): $(4,7)$

8. **Use the graph to find the relative maxima and minima.**



Relative Maximum point: (2, 3)
(x, y)

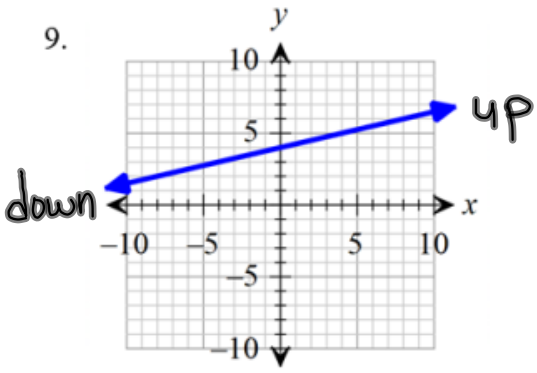
Relative Maximum value: 3
y value

Relative Minimum point: (0, -1)
(x, y)

Relative Minimum value: -1
y-value

Find the end behavior of each function based on its graph. Write the answers as limits.

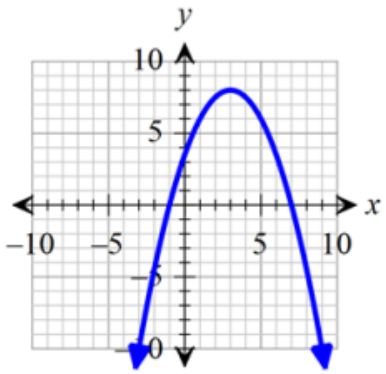
9.



Left End Behavior: $\lim_{x\to-\infty} f(x) = -\infty$

Right End Behavior: $\lim_{x\to\infty} f(x) = \infty$

10.



Left End Behavior: $\lim_{x\to-\infty} f(x) =$ ____

Right End Behavior: $\lim_{x\to\infty} f(x) = -\infty$