

Integrated Math 3  
 Unit 3: Representing Functions  
 3.6 Worksheet

Name: \_\_\_\_\_

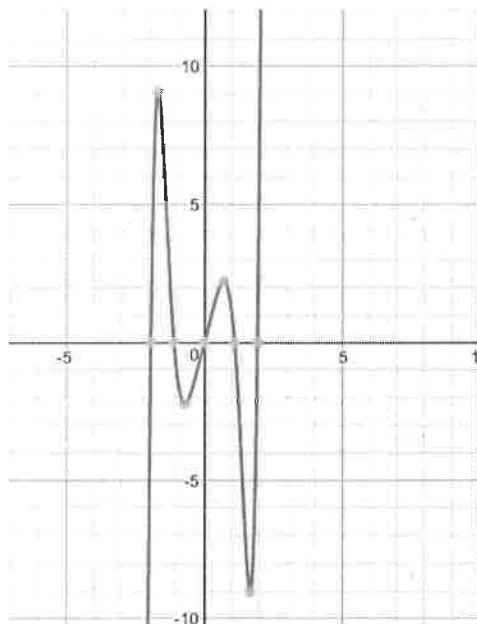
Date: \_\_\_\_\_ Period: \_\_\_\_\_

Unit 3 Quiz Review

1. Determine the following from the given graph

- X-Intercepts:  $(-2, 0), (-1, 0), (0, 0), (1, 0), (2, 0)$
- Y-Intercepts:  $(0, 0)$
- Relative Minimum:  $(-0.7, -2), (1.7, -9)$
- Relative Maximum:  $(-1.7, 9), (0.7, 2)$
- Absolute Minimum: *none*
- Absolute Maximum: *none*
- Increasing Interval:  $(-\infty, -1.7) \cup (-0.7, 0.7) \cup (1.7, \infty)$
- Decreasing Interval:  $(-1.7, -0.7) \cup (0.7, 1.7)$
- Domain:  $(-\infty, \infty)$
- Range:  $(-\infty, \infty)$
- End Behavior:  $x \rightarrow -\infty, f(x) \rightarrow -\infty$
- Odd or Even:  $x \rightarrow \infty, f(x) \rightarrow \infty$

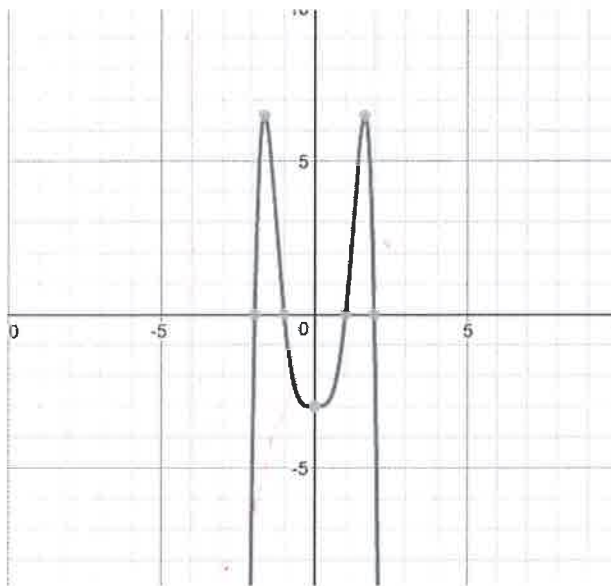
*Odd*



2. Determine the following from the given graph

- X-Intercepts:  $(-2, 0), (-1, 0), (1, 0), (2, 0)$
- Y-Intercepts:  $(0, -3)$
- Relative Minimum:  $(0, -3)$
- Relative Maximum:  $(-1.7, 6.5), (1.7, 6.5)$
- Absolute Minimum: *none*
- Absolute Maximum:  $(-1.7, 6.5), (1.7, 6.5)$
- Increasing Interval:  $(-\infty, -1.7) \cup (0, 1.7)$
- Decreasing Interval:  $(-1.7, 0) \cup (1.7, \infty)$
- Domain:  $(-\infty, \infty)$
- Range:  $(-\infty, 6.5]$
- End Behavior:  $x \rightarrow -\infty, f(x) \rightarrow -\infty$
- Odd or Even:  $x \rightarrow \infty, f(x) \rightarrow -\infty$

*Even*



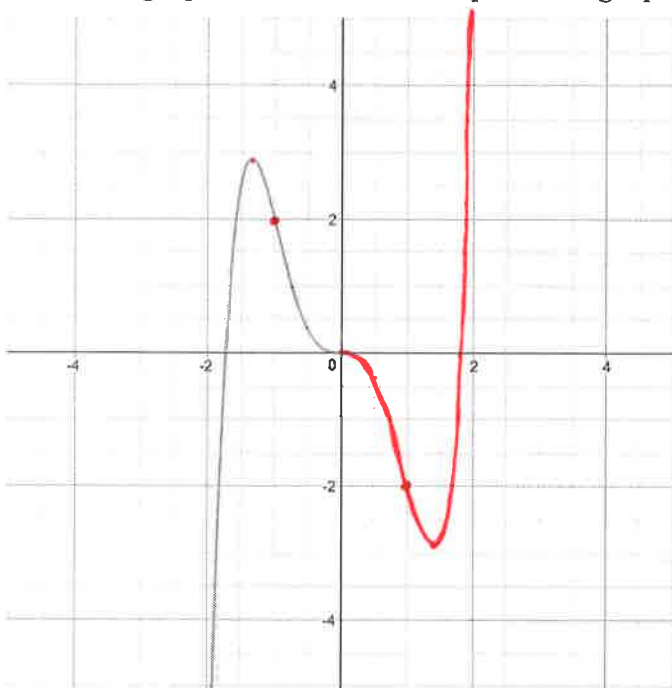
3. Given the function below is even, complete the table:

$x$	$y$
-5	6
-3	4
-1	-3
0	0
1	-3
3	4
5	6

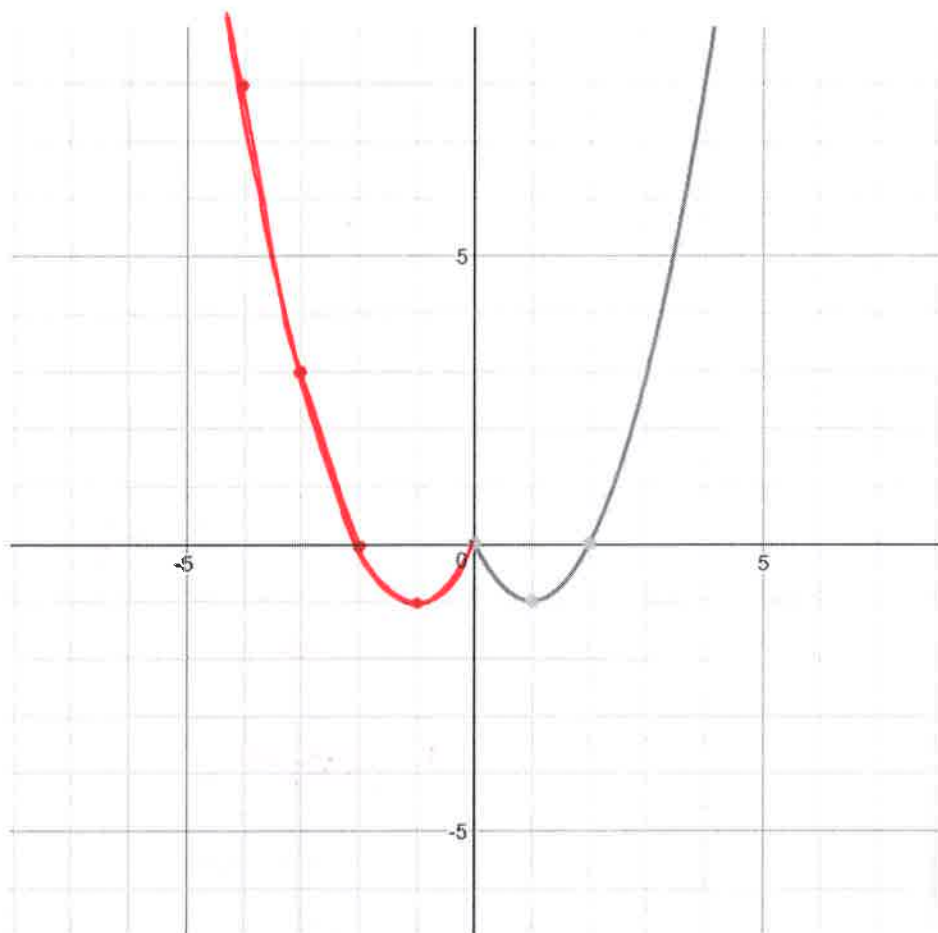
4. Given the function below is odd, complete the table:

$x$	$y$
-5	-4
-3	2
-1	1
0	0
1	-1
3	-2
5	4

5. Given the graph below is odd, complete the graph:



6. Given the graph below is even, complete the graph:



7. Identify the vertex, the steepness of the function, and the direction of the opening given the following functions:

a.  $y = -|x + 3| - 4$

Vertex:  $(-3, -4)$   
opens down

b.  $y = 2|x| + 6$

vertex:  $(0, 6)$   
opens up  
stretches by 2

c.  $y = |x - 2|$

vertex:  $(2, 0)$   
opens up

d.  $y = -\frac{4}{3}|x - \frac{1}{2}| - \frac{1}{2}$

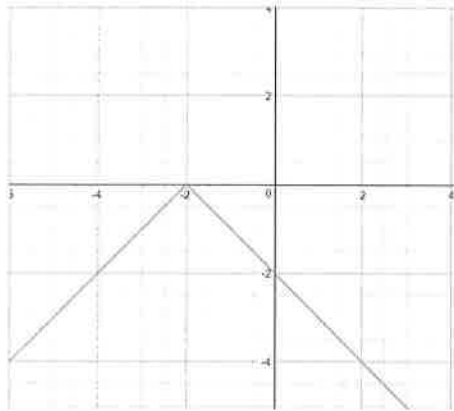
vertex:  $(\frac{1}{2}, -\frac{1}{2})$   
opens down  
stretches by  $\frac{4}{3}$

e.  $y = -3|x - 2| + 1$

vertex:  $(2, 1)$   
opens down  
stretches by 3

8. Given the graph below, determine the following information and write the equation of the function

a.

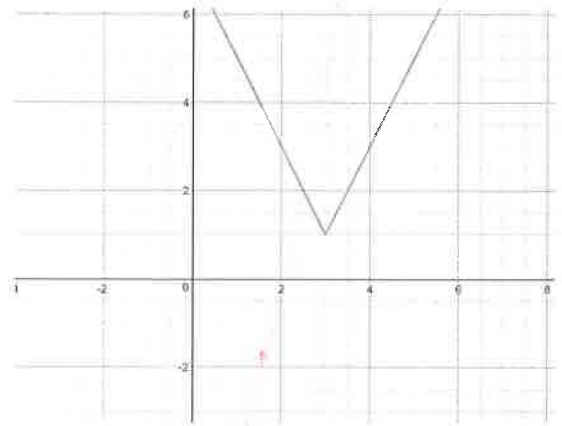


Vertex:  $(-2, 0)$  Slopes of rays:  $\pm 1$

Direction of opening: *down*

Equation:  $y = -|x + 2|$

b.



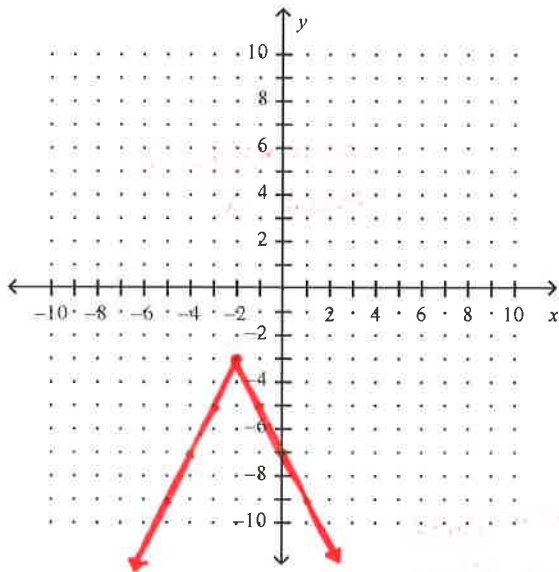
Vertex:  $(3, 1)$  Slopes of rays:  $\pm 2$

Direction of opening: *up*

Equation:  $y = 2|x - 3| + 1$

9. Graph the following absolute value functions on the coordinate planes provided. Explain how the graph transformed from the parent function  $y = |x|$

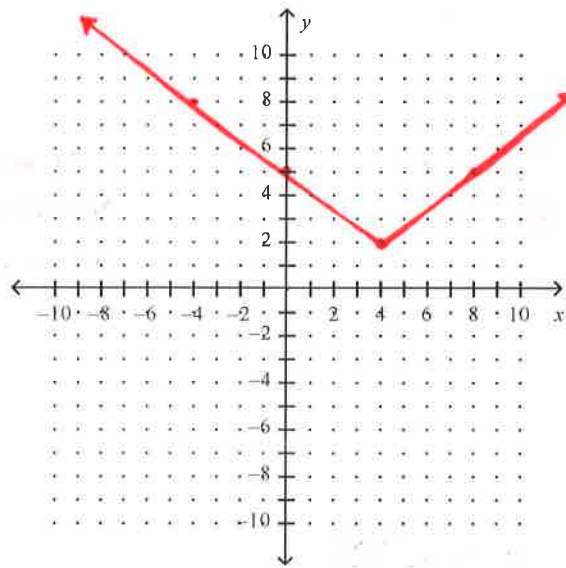
a.  $y = -2|x + 2| - 3$



Transformations:

*left 2, down 3,  
stretches by 2,  
reflects over x-axis*

b.  $y = \frac{3}{4}|x - 4| + 2$



Transformations:

*right 4, up 2,  
compresses by 3/4*