Lesson 4.1 Worksheet

Name: _____

Graph the function by completing the table. Identify the graph's axis of symmetry, vertex, whether the graph opens up or down, and its maximum/minimum value. Then compare the graph with the graph of $y = x^2$.

1.) $y = -2x^2$

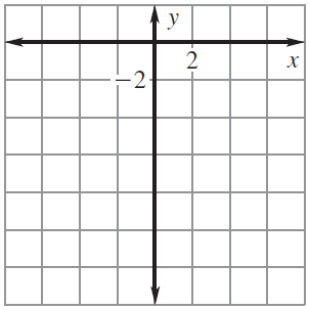
AOS: _____

vertex: _____

opens: _____

max./min. value:

_____



x					
y					

comparison to $y = x^2$:

2.) $y = 4x^2 + 1$

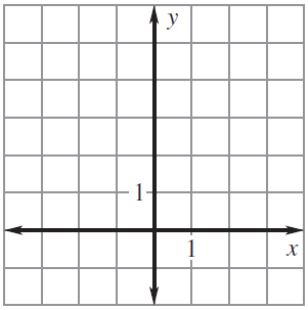
AOS: _____

vertex: _____

opens: _____

max./min. value:

_____



x					
y					

comparison to $y = x^2$:

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

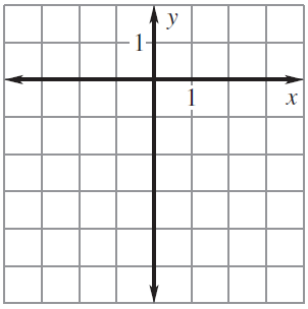
AOS: _____

vertex: _____

opens: _____

max./min. value:

_____



x					
y					

comparison to $y = x^2$:

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

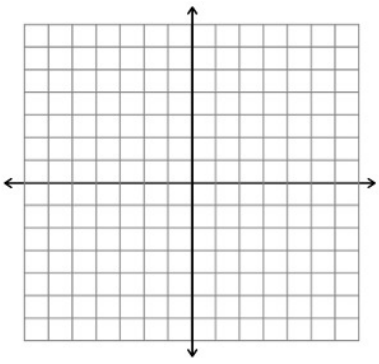
AOS: _____

vertex: _____

opens: _____

max./min. value:

_____

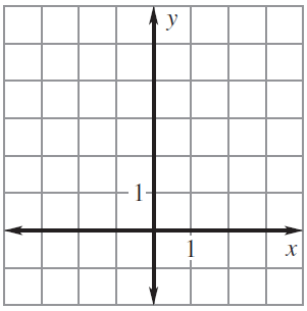


x					
y					

comparison to $y = x^2$:

Identify the graph's axis of symmetry, vertex, *y*-intercept, whether the graph opens up or down, and its maximum/minimum value. Then graph the function by completing the table.

5.) $y = 3x^2 - 6x + 4$



AOS: _____

vertex: _____

y-int: _____

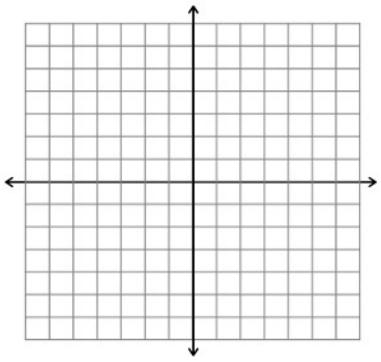
opens: _____

max./min. value: _____

x					
y					

work:

6.) $y = -4x^2 + 8x + 2$



AOS: _____

vertex: _____

y-int: _____

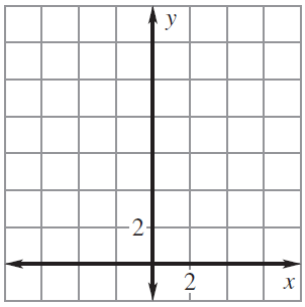
opens: _____

max./min. value: _____

x					
y					

work:

7.) $y = -3x^2 - 12x + 1$



AOS: _____

vertex: _____

y-int: _____

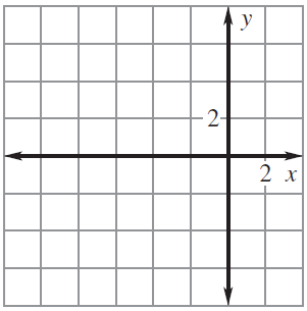
opens: _____

max./min. value: _____

x					
y					

work:

8.) $y = x^2 + 5x - 1$



AOS: _____

vertex: _____

y-int: _____

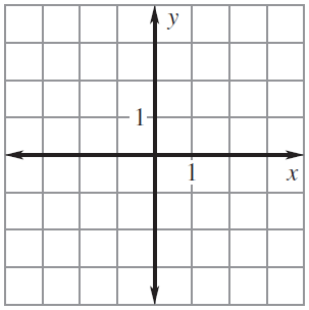
opens: _____

max./min. value: _____

x					
y					

work:

9.) $y = 3x^2 + 3x - 2$



AOS: _____

vertex: _____

y-int: _____

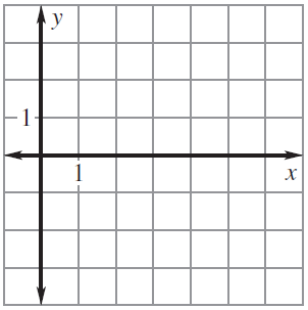
opens: _____

max./min. value: _____

x					
y					

work:

10.) $y = -\frac{1}{2}x^2 + 3x - 1$



AOS: _____

vertex: _____

y-int: _____

opens: _____

max./min. value: _____

x					
y					

work:

Without graphing, tell whether the function has a *minimum value* or a *maximum value*. Then find the minimum or maximum value.

11.) $y = 9x^2 + 7$

min. or a max? _____

value: _____

12.) $f(x) = 2x^2 + 8x + 7$

min. or a max? _____

value: _____

13.) $g(x) = -3x^2 + 18x - 5$

min. or a max? _____

value: _____

14.) $f(x) = \frac{3}{2}x^2 + 6x + 4$

min. or a max? _____

value: _____

15.) An electronics store sells about 70 of a new model of digital camera per month at a price of $320 each. For each $20 decrease in price, about 5 more cameras per month are sold. Write a function that models the situation. Then tell how the store can maximize monthly revenue from sales of the camera.