

## Quadratic Functions Exploration Assignment (30 points)

### Different Forms of a Quadratic Function

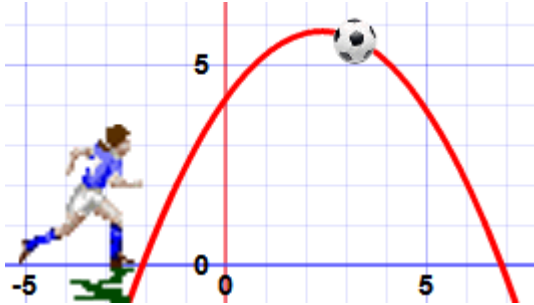
Standard form:  $f(x) = -x^2 - 8x - 12$

Intercept or Factored form:  $f(x) = -(x + 6)(x + 2)$

Vertex Form:  $f(x) = -(x + 4)^2 + 4$

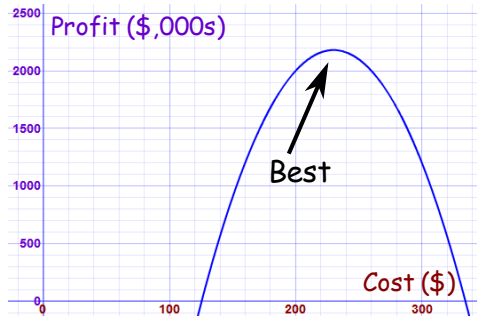
Where we find Quadratics in real life:

Sports:



$y = x^2$

Business:

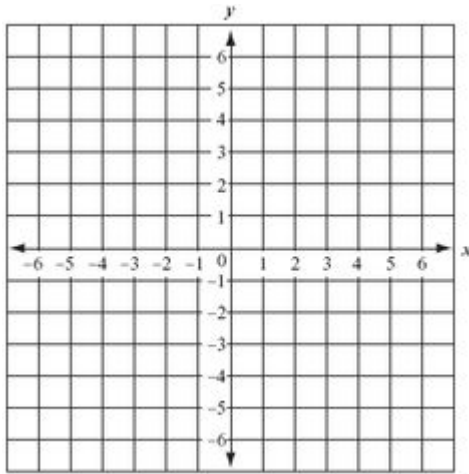


$y = 2x^2$

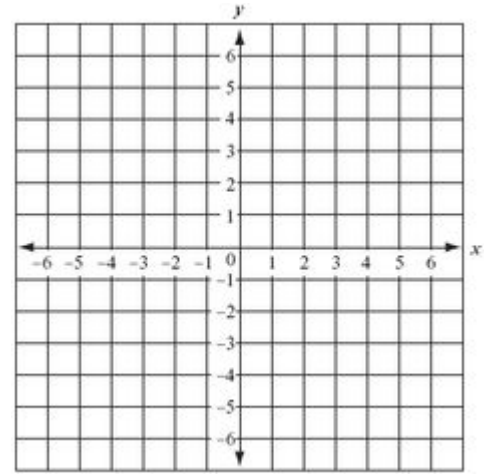
Object:



x	y
-2	
-1	
0	
1	
2	

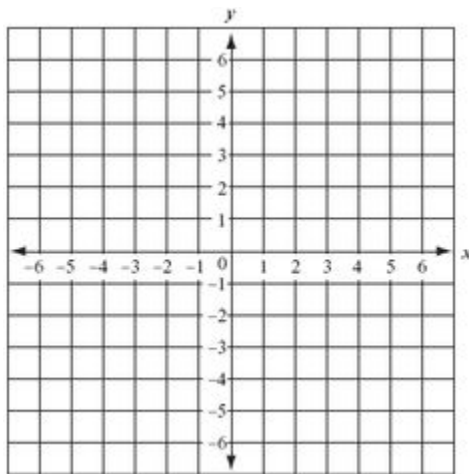


x	y
-2	
-1	
0	
1	
2	



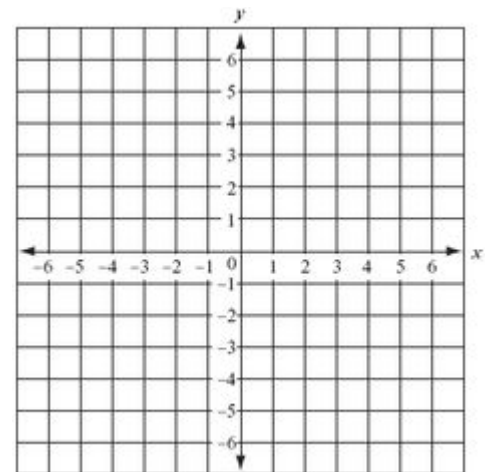
$y = \frac{1}{2}x^2$

x	y
-2	
-1	
0	
1	
2	



$y = -x^2$

x	y
-2	
-1	
0	
1	
2	



Name \_\_\_\_\_ Date \_\_\_\_\_ Per \_\_\_\_\_

## Quadratic Functions Exploration Assignment (30 points)

Write a conclusion on what you discover about the 4 quadratic graphs above. Identify the similarities and differences.

Similarities: Provide at least 2 similarities with descriptions in full sentences for full credit.

1.)

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2.)

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Differences: Provide at least 2 differences with descriptions in full sentences for full credit.

1.)

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2.)

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3.) Provide a real-world scenario or object of where you can see a parabola in real life. (different than what's shown above. Draw a diagram or write out a scenario of what you come up with.