Survival Guide   Unit 5 – Quadratics   Name: _____
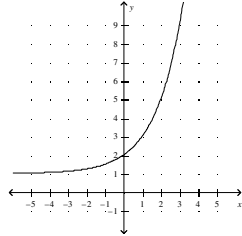
Identify LINEAR or QUADRATIC or NEITHER   Vocabulary

1.

x	y
2	-11
3	-15
4	-19
5	-23

7.
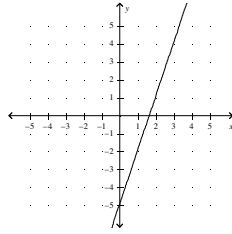
8.

2.

x	y
0	-5
2	-3
4	3
6	13

9.
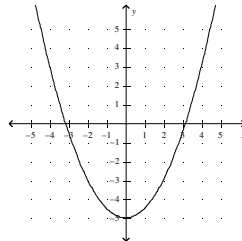
3.

x	y
0	1
1	2
2	4
3	8

10.
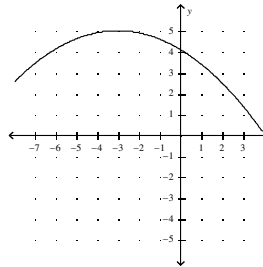
4. $3x - 5y = 15$

5. $y = 2x^2 + 5x - 10$

11. $y = x(x+4)$

6. $y = x - 5^2$
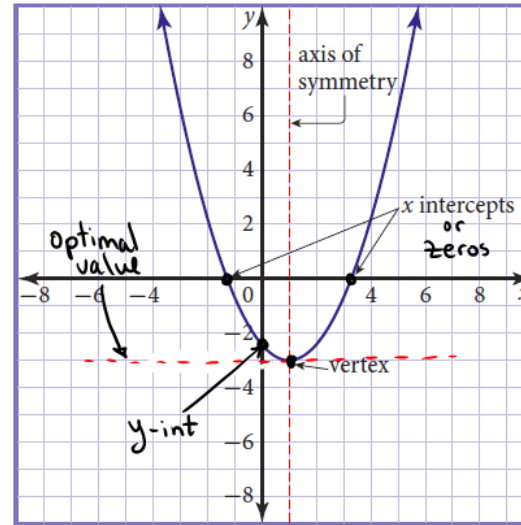
Max or Min ?

Optimal Value

Axis of symm

Vertex

Zeros/x-int

Y-intercept

Use a table to sketch

x	$y = 6 - 0.5(x+2)^2$
-2	
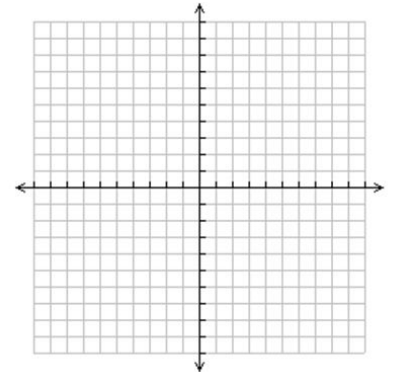
Max or Min ?

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VERTEX FORM $y = a(x-h)^2 + k$

$y = 3(x-1)^2 - 36$

A natural stone bridge forms over a river. Water erodes the rock surface making a hole for water to pass through, which enlarges gradually over time. The largest natural stone bridge is the Rainbow Bridge in Utah. It has an approximately parabolic shape.
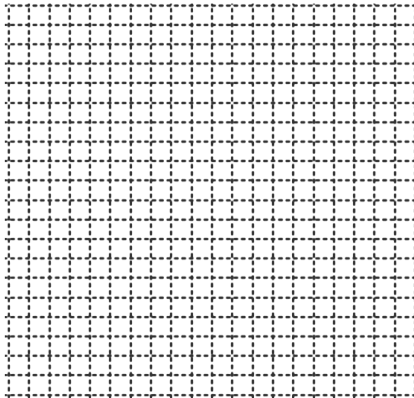
The curve can be modelled by the equation $h = -0.0159d^2 + 290$, where h is the height and d is the width, both in feet.

a) Fill in table using vertex and two other points

d	h

Sketch

b) What is the vertex?

d) What is the max height?

e) Find the width of the arc at ground level.

c) Find the zeros by subbing in h=0 and solving for d

STANDARD FORM $y = ax^2 + bx + c$ **FACTORED FORM** $y = a(x-r)(x-t)$

A ball is thrown and its path can be modelled by the relation $h = 45 + 40t - 5t^2$, where h is the height of the ball in feet and t is the time in seconds after the ball is thrown.

a) Factor the equation and find zeros

b) Fill in table using zeros and middle point

t	h

The path of a soccer ball can be represented by the relation $h = -0.05x^2 + 1.5x$, where h is the height of the soccer ball in yards and x is the horizontal distance the ball travels in yards.

a) Factor to find the zeros

b) Fill in table using zeros and middle point

x	h