

Tonight's Class:

- Unit 1 Test return and rewrite sign-up
- What about 3.3-3.6?
- Reviewing graphing

4.1 Properties of a Quadratic Function

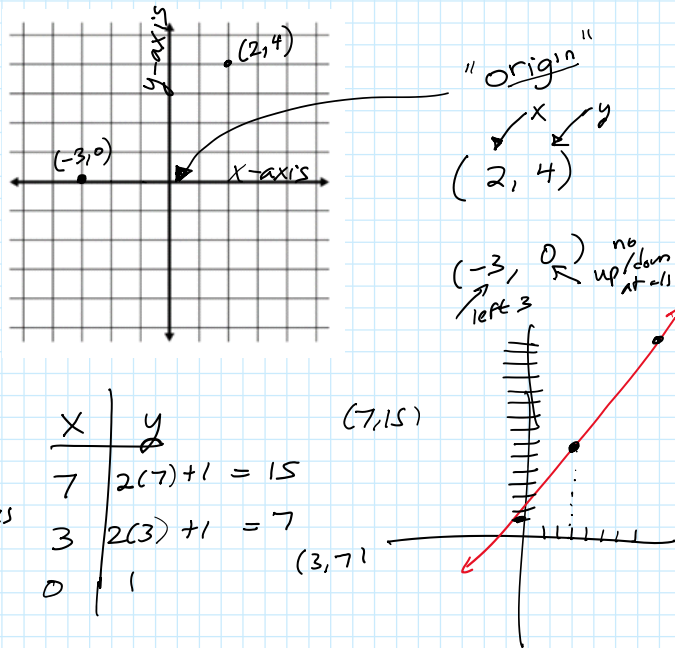
Focus: determine the characteristics of a quadratic function and sketch its graph

Graph a Quadratic Equation and Find its Characteristics

Recall: Using a Table of Values to Graph Equations



René Descartes



$y = 2x + 1$

Choose x-values

Graphing Equations

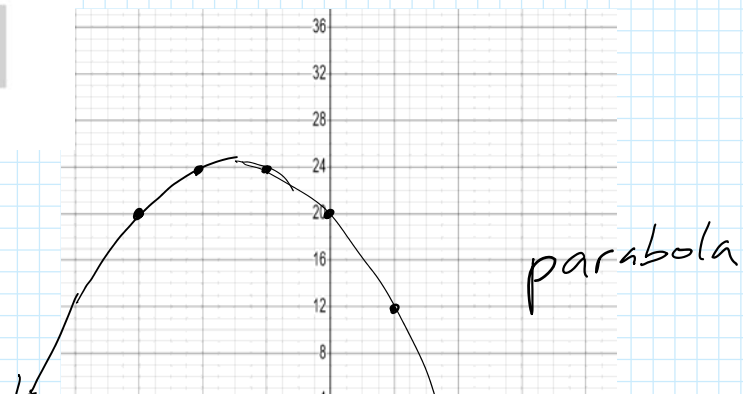
WT n 272

Example 1 Identifying the Characteristics of a Quadratic Function from Its Graph

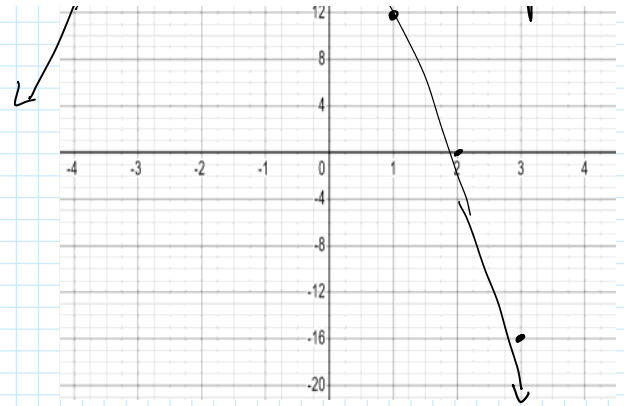
a) Graph $y = -2x^2 - 6x + 20$.

substitute in

x	y
-3	20
-2	24
-1	24
0	20



$$\begin{array}{r|l} -1 & 24 \\ 0 & 20 \\ 1 & 12 \\ 2 & 0 \\ 3 & -16 \end{array}$$



Try p 278, #8b - graph only

Quadratic Functions – what are they?

Quadratic – function that has a variable multiplied by itself, so it is “squared.” The word quadratic comes from the Latin word for square, *quadratum*.

When we graph any quadratic function, the shape we get is called a **PARABOLA**.

$$y = ax^2 + bx + c, \quad a \neq 0$$

(General Form)


 $2 \times 2 = 2^2$


 $3 \times 3 = 3^2$


 $4 \times 4 = 4^2$


 $x \cdot x = x^2$

Quadratic functions have real-world applications:

[Parabolas in the "Real-World"](#)



For next class

- Complete the Chapter 3 Hand-in, due Feb 14 (next class!)
- Prepare for the Chapter 3 Test, on Feb 14

