

10.1: Establishing Quadratics and Functions

“I WILL ...

Identify the difference between a linear and quadratic function.

Establish the basics of the quadratic”

I. Introduction to Quadratics

- A. _____ is viewed as, $ax^2 + bx + c = 0$, where $a \neq 0$
- B. _____ is an u-shaped graph
1. If a is positive, it opens up
 2. If a is negative, it opens down
- C. In a table, the common difference is _____ as much as a linear function.

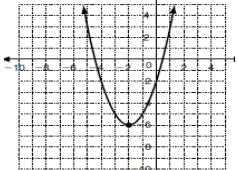
III. Quadratic Tables

- A. Take the difference from the x and the y 's.
- B. If the x 's are consistent, take the difference of the y 's throughout. If the changes of x -coordinates are not consistent, take the slope.
1. If the y -coordinates are consistent, it is a _____ function
 2. If the y -coordinates are not consistent, take the difference again. If they are consistent for a second time, it is a _____ function
 3. If they are not consistent again, it can be a cubic function or not a function at all.

III. Definitions

- A. How it opens: Does it open up or down?
- B. Vertex: The highest/lowest part of the graph
- C. Roots: Where does it cross the x -Line?
- D. Y-Intercept: Where does it cross the y -Line?
- E. Line of Symmetry: Equation of which the X of the vertex

IV. Model Problems

<p>Ex 1: Is this graph linear or quadratic?</p> 	<p>Ex 2: Is this graph linear or quadratic?</p>	<p>Ex 3: Is this equation, $-12x + 3y = 9$ linear or quadratic?</p>	<p>Your Turn: Is this equation, $-12x^2 + 2y = 6$ linear or quadratic?</p>
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Ex 4: Is this table linear, quadratic, or neither? Show work.

x	y
-2	-7
-1	-5
0	-3
1	-1
2	1

Ex 5: Is this table linear, quadratic, or neither? Show work.

x	y
-2	-14
-1	-6
0	-4
1	-8
2	-18

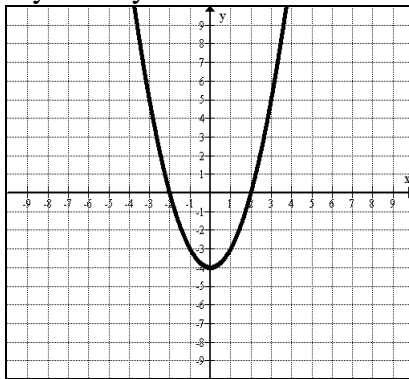
Ex 6: Is this table linear, quadratic, or neither? Show work.

x	y
-2	-6
-1	1
0	2
1	3
2	10

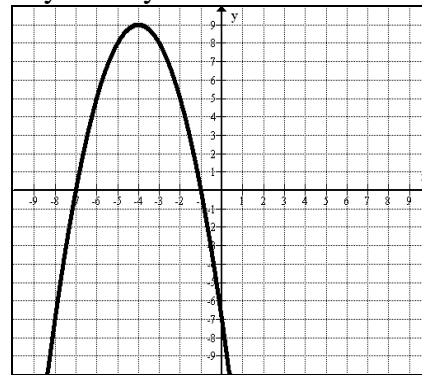
Your Turn: Is this table linear, quadratic, or neither? Show work.

x	y
-2	11
-1	6
0	3
1	2
2	3

Ex 7: Given this graph, identify how the graph opens, vertex, roots, y-intercept and line of symmetry.



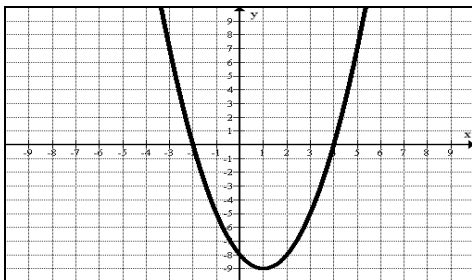
Ex 8: Given this graph, identify how the graph opens, vertex, roots, y-intercept and line of symmetry.



Opens: _____ Vertex: _____

Roots: _____ Y-int.: _____ LOS: _____

Your Turn: Given this graph, identify how the graph opens, vertex, roots, y-intercept and line of symmetry.



Opens: _____ Vertex: _____

Roots: _____ Y-int.: _____ LOS: _____