Lesson 13: Graphing Quadratic Functions

• I can graph a quadratic functions using transformations.

Warm-Up:

Solve.

1) $2x^2 - 13 = 37$ 2) $(x + 6)^2 = 81$

Example 1: The Quadratic Function $f(x) = x^2$

A **parent graph** is a graph of a relatively simple function. We use this graph to determine the shape. Then we transform this graph in various ways such as translating, reflecting and dilating.

 $f(x) = x^2$

х	f(x)
-2	
-1	
0	
1	
0	



Example 2:

A **transformation** is a general term for changing a graph in various ways such as translating, reflecting and dilating.

Given f(x) is the parent function, then...

- a) f(x) + a:
- b) f(x) a:
- c) f(x + a):
- d) f(x a):
- e) -f(x):

Example 3:

Graph the following using transformations.



M2

Algebra 1

Problem Set

Graph each transformation of $f(x) = x^2$ and describe how it compares to the parent function.

Name:

1) $f(x) = x^2 + 5$ 2) $f(x) = x^2 - 3$ 3) $f(x) = (x + 4)^2$ Transformation(s): Transformation(s): Transformation(s): 10 10 10 -10 .-10 -10 10, x 410 ±10 -10



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Hour:

