

HOW Reminders

Preparedness:

- Be in the classroom when the bell rings
- Have something to write with, a calculator, and your notebook

Engagement:

- Have your phone and computer put away

Warm-Up

1) $5 + x = 14 + 8 + 5x - 1$

$x = -4$

2) $-30 - 7x = -7(x + 5)$

no solution

3) If a line has a slope of -4 , how does that mean you move from point to point?

Down 4 and right 1
Or
Up 4 and left 1

1.1 – Parent Functions and Transformations

Unit 1 – Quadratic Functions

Functions that belong to the same family share key characteristics.

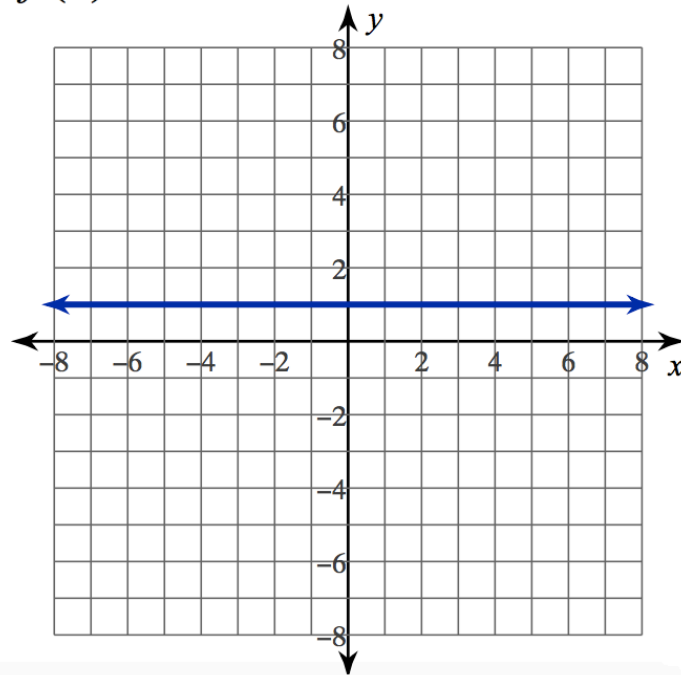
The *parent function* is the most basic function in a family.

Constant Function

Domain: All real numbers
(x values)

Range: $y = 1$
(y values)

$$f(x) = 1$$



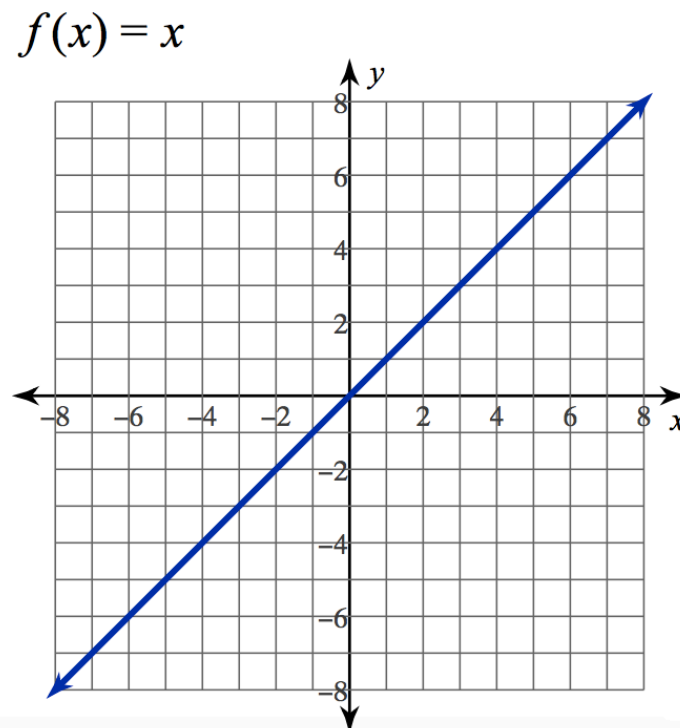
Functions that belong to the same family share key characteristics.

The *parent function* is the most basic function in a family.

Linear Function

Domain: All real numbers

Range: All real numbers



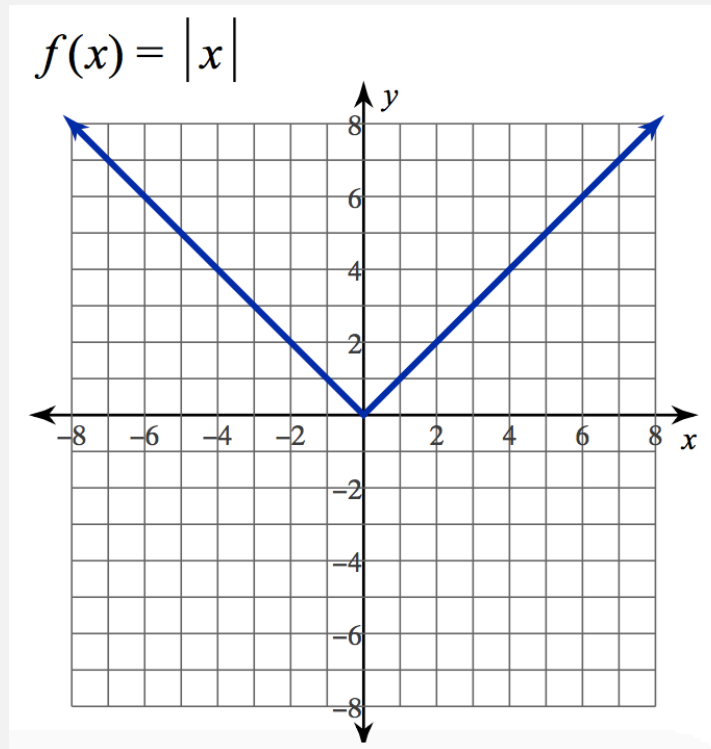
Functions that belong to the same family share key characteristics.

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Absolute Value Function

Domain: All real numbers

Range: $y \geq 0$



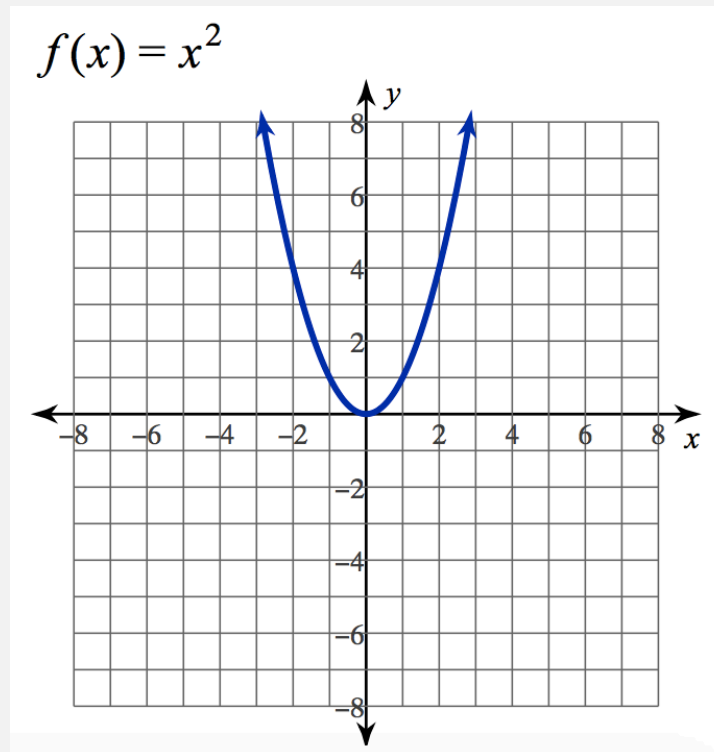
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Quadratic Function

Domain: All real numbers

Range: $y \geq 0$



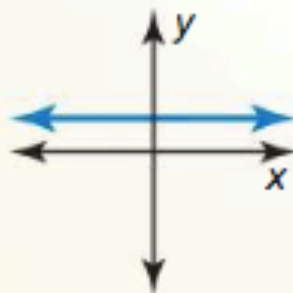
Core Concept

Parent Functions

Family Constant

Rule $f(x) = 1$

Graph

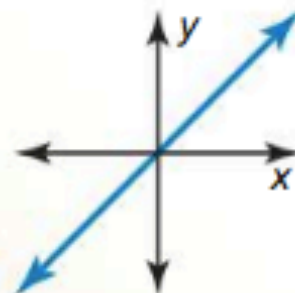


Domain All real numbers

Range $y = 1$

Family Linear

Rule $f(x) = x$

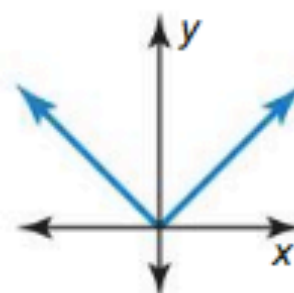


Domain All real numbers

Range All real numbers

Family Absolute Value

Rule $f(x) = |x|$

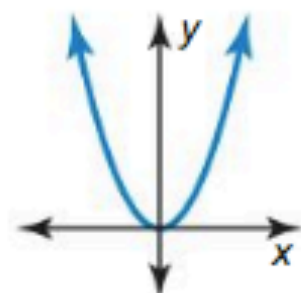


Domain All real numbers

Range $y \geq 0$

Family Quadratic

Rule $f(x) = x^2$



Domain All real numbers

Range $y \geq 0$

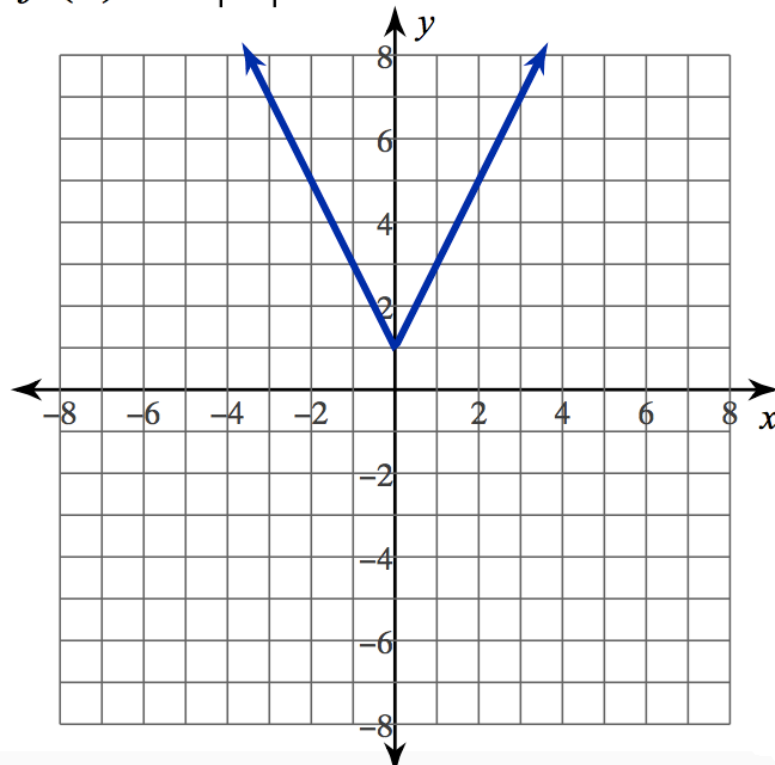
Identifying a Function Family

Which function family does f belong to?

Absolute value function

How does it compare to its parent function?

$$f(x) = 2|x| + 1$$



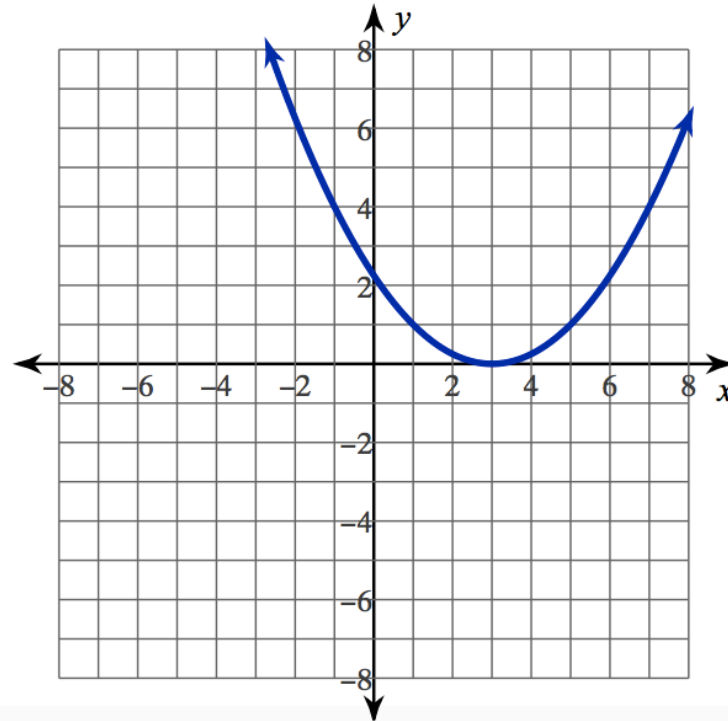
Identifying a Function Family

Which function family does f belong to?

quadratic function

How does it compare to its parent function?

$$f(x) = \frac{1}{4}(x - 3)^2$$



Your task:

Find **5** examples **of each** parent function in the classroom (or at home if we run out of time). Highlight and label the parent function on the picture. Then, email them to me, or send them to me in a google doc. abbotte@rsu5.org. See the examples for help.



Examples:



Examples:

