

Chapter 1

Linear Functions

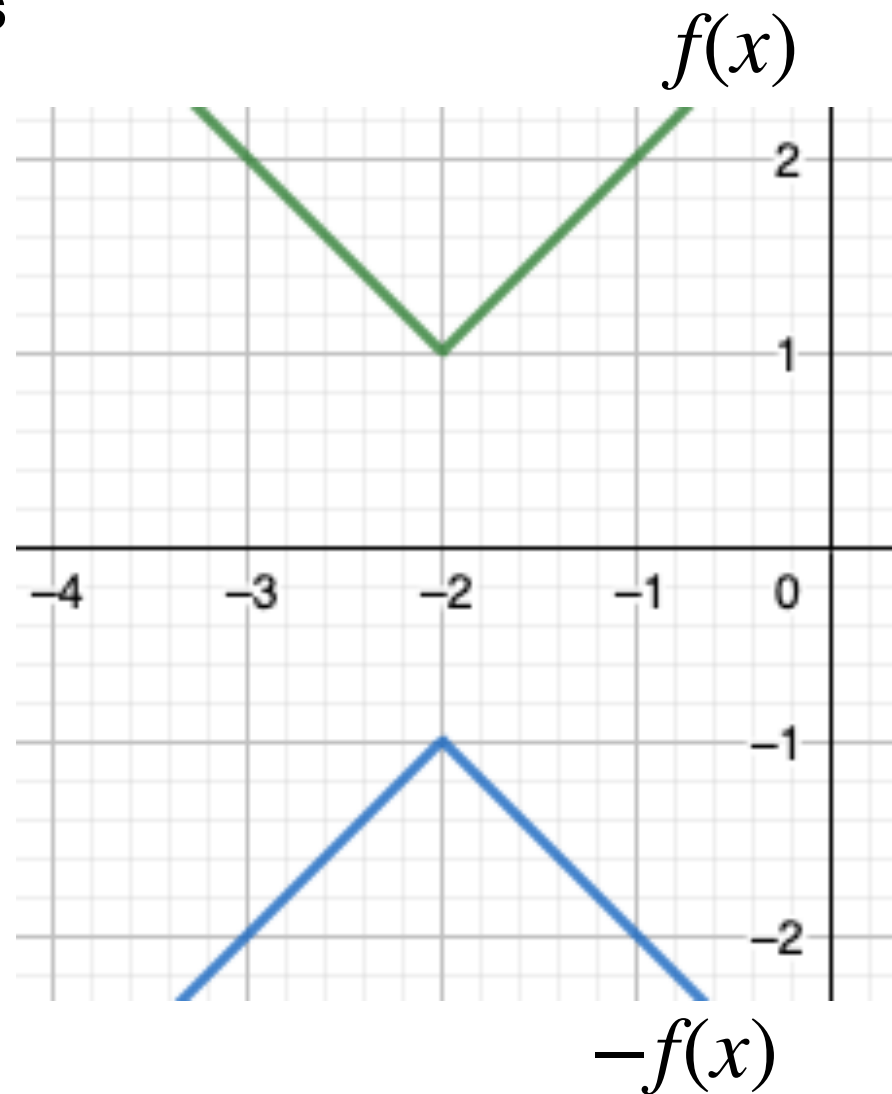


1. Parent Functions and Transformations
- 2. Transformations of Linear and Absolute Value Functions**
3. Modeling with Linear Functions
4. Solving Linear Systems

1.2 - Transformations of Linear and Absolute Value Functions

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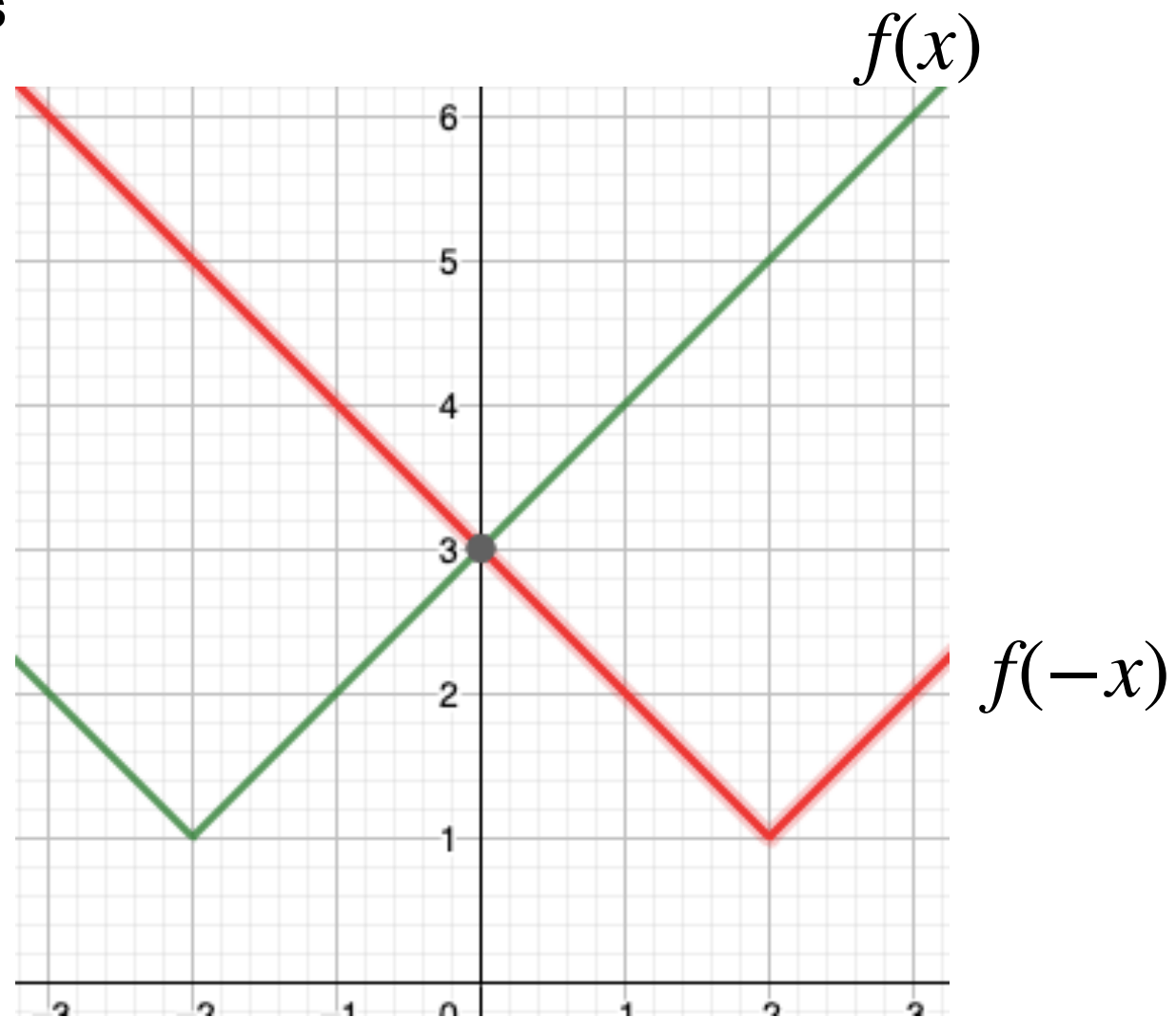
Reflections



1.2 - Transformations of Linear and Absolute Value Functions

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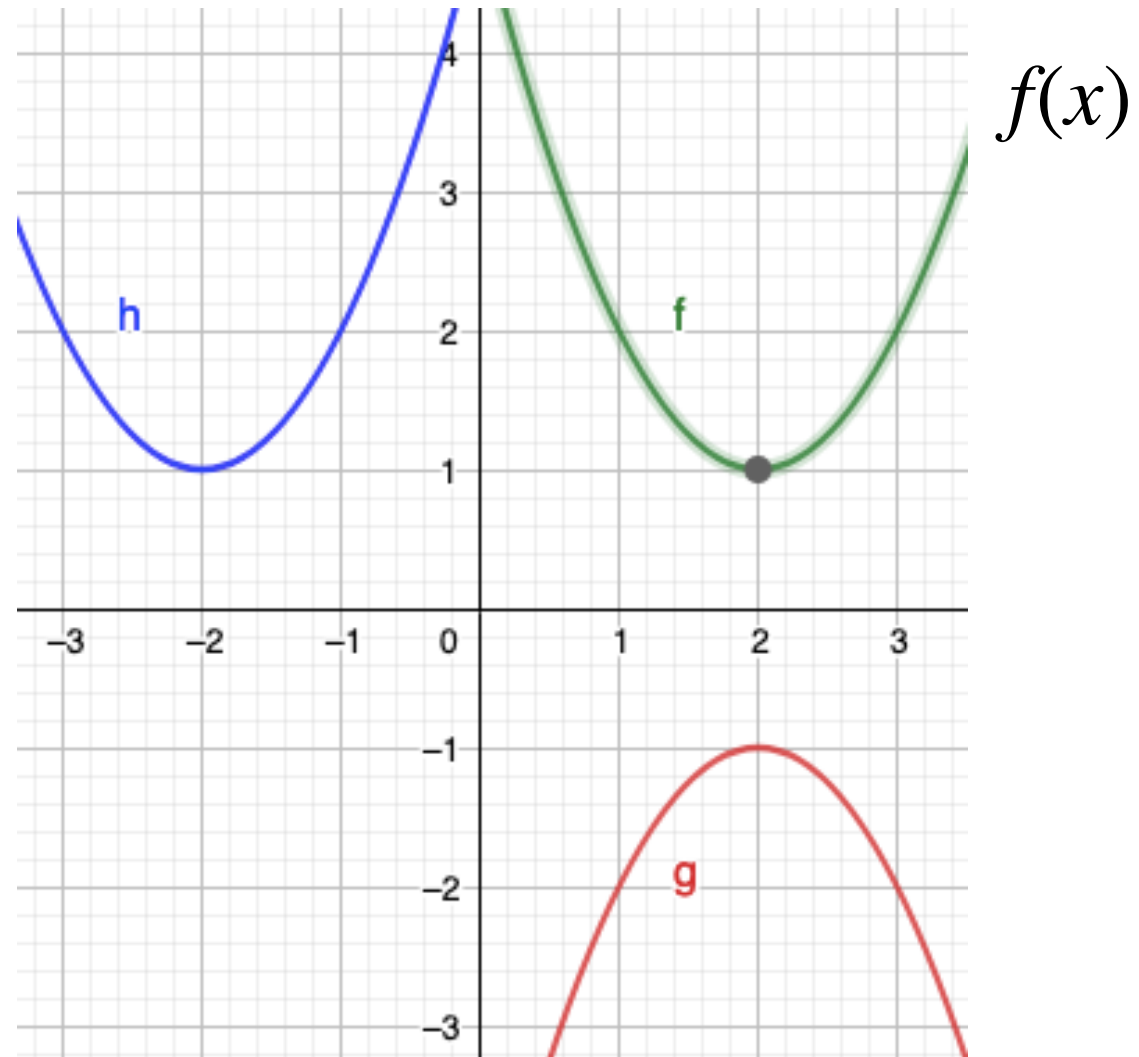
Reflections



1.2 - Transformations of Linear and Absolute Value Functions

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Reflections

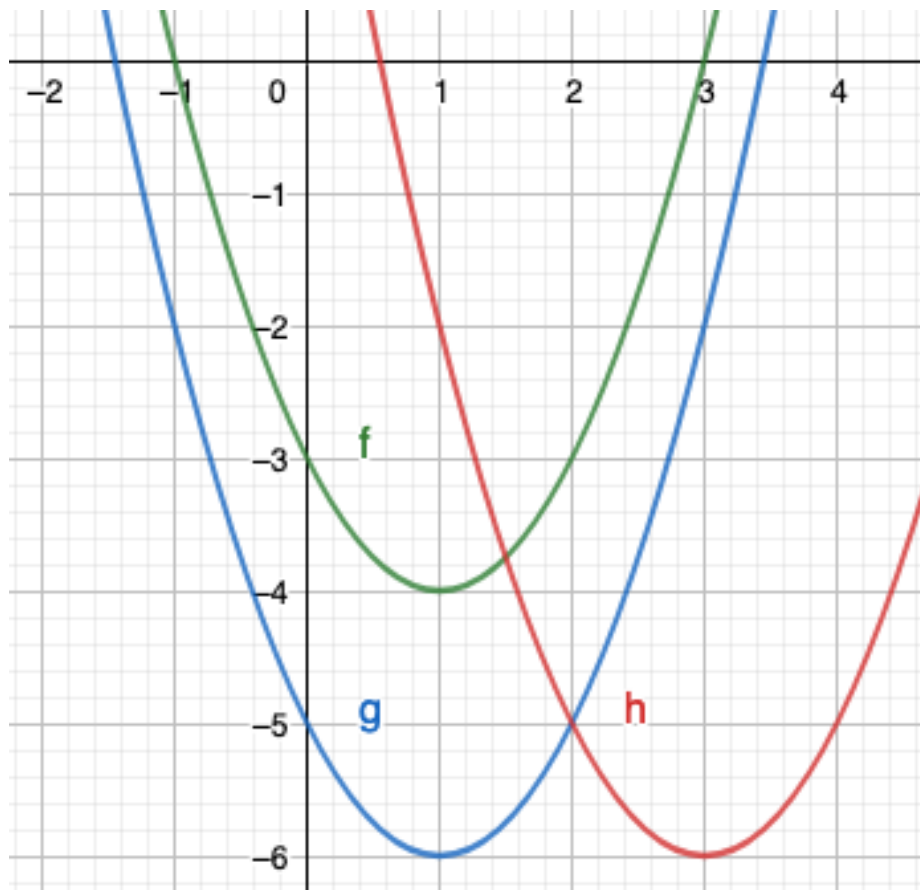


Which is $-f(x)$ and $f(-x)$?

1.2 - Transformations of Linear and Absolute Value Functions

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Translations



$$y = x^2 - 2x - 3$$

What is $(f(x) - 2)$?

$$y = x^2 - 2x - 3 - 2$$

$$y = x^2 - 2x - 5$$

What is $f(x - 2)$?

$$y = (x - 2)^2 - 2(x - 2) - 5$$

$$y = x^2 - 4x + 4 - 2x + 4 - 5$$

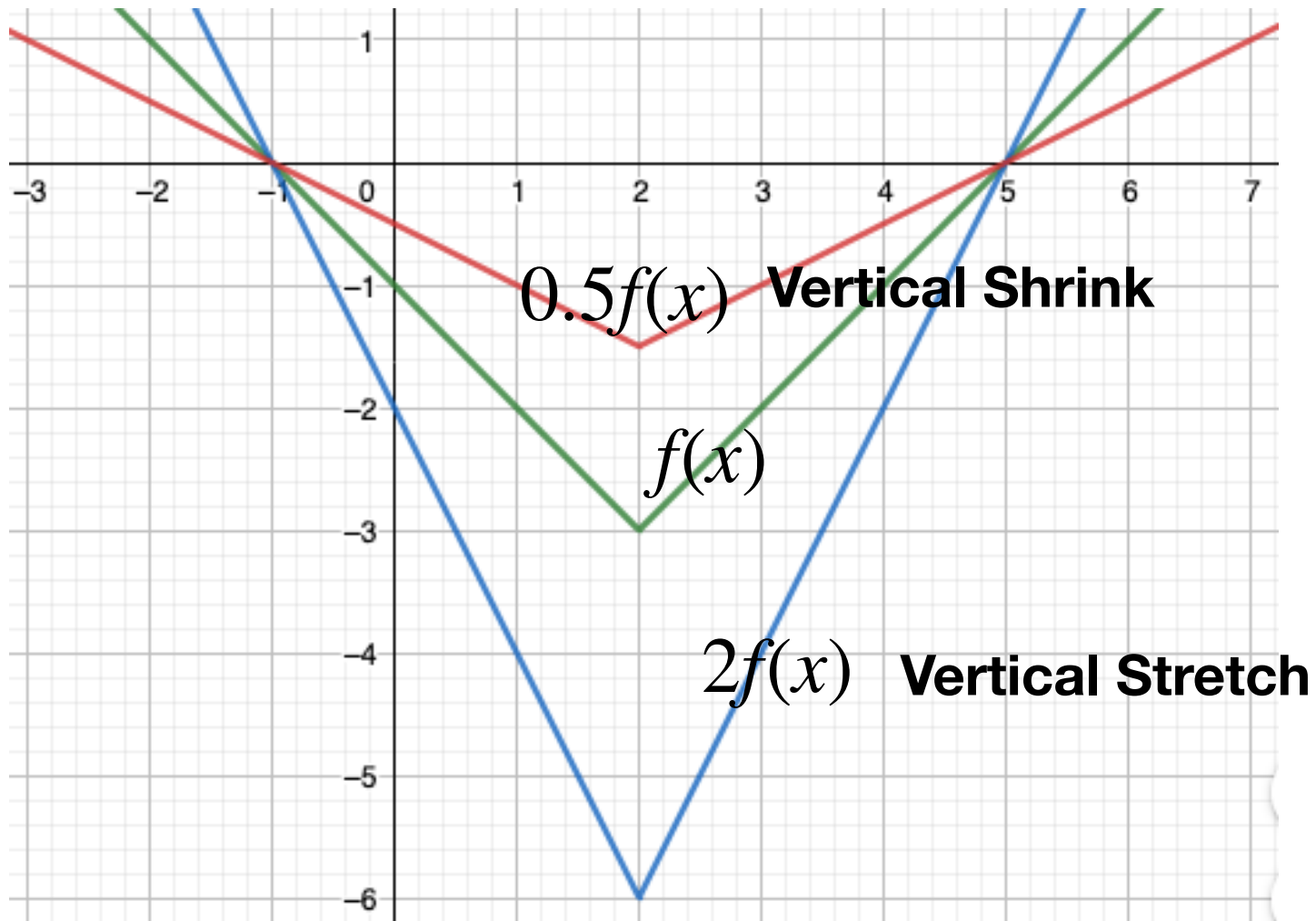
$$y = x^2 - 6x + 3$$

What if move 3U and 2L?

$$y = (x + 2)^2 - 6(x + 2) + 3 + 3$$

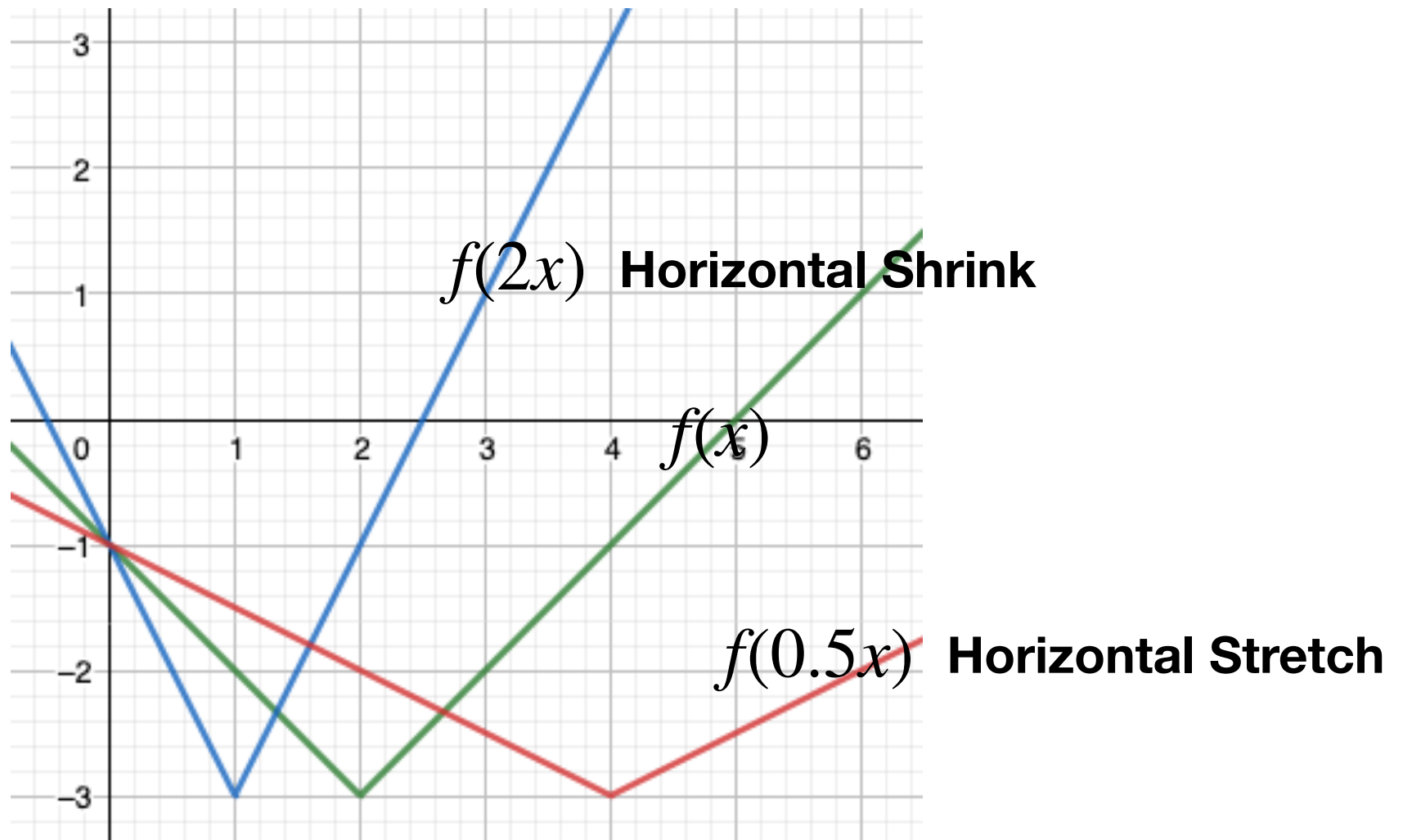
1.2 - Transformations of Linear and Absolute Value Functions

Stretching and Shrinking



1.2 - Transformations of Linear and Absolute Value Functions

Stretching and Shrinking



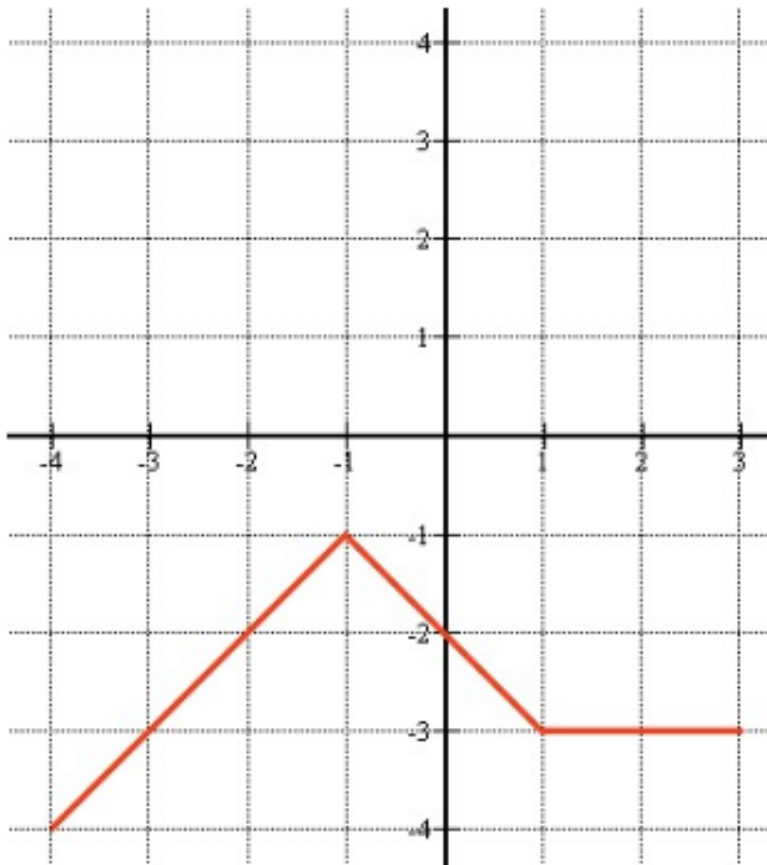
1.2 - Transformations of Linear and Absolute Value Functions

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Transformations

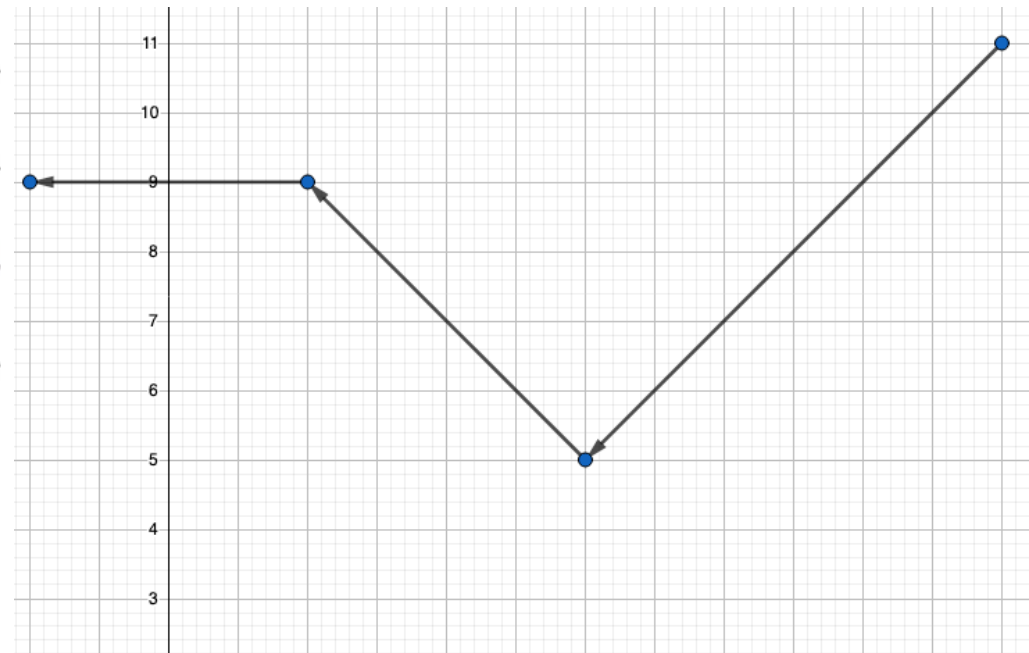
$$-2f(-0.5x + 2) + 3$$

$$-2f(-0.5(x - 4)) + 3$$



$f(x)$

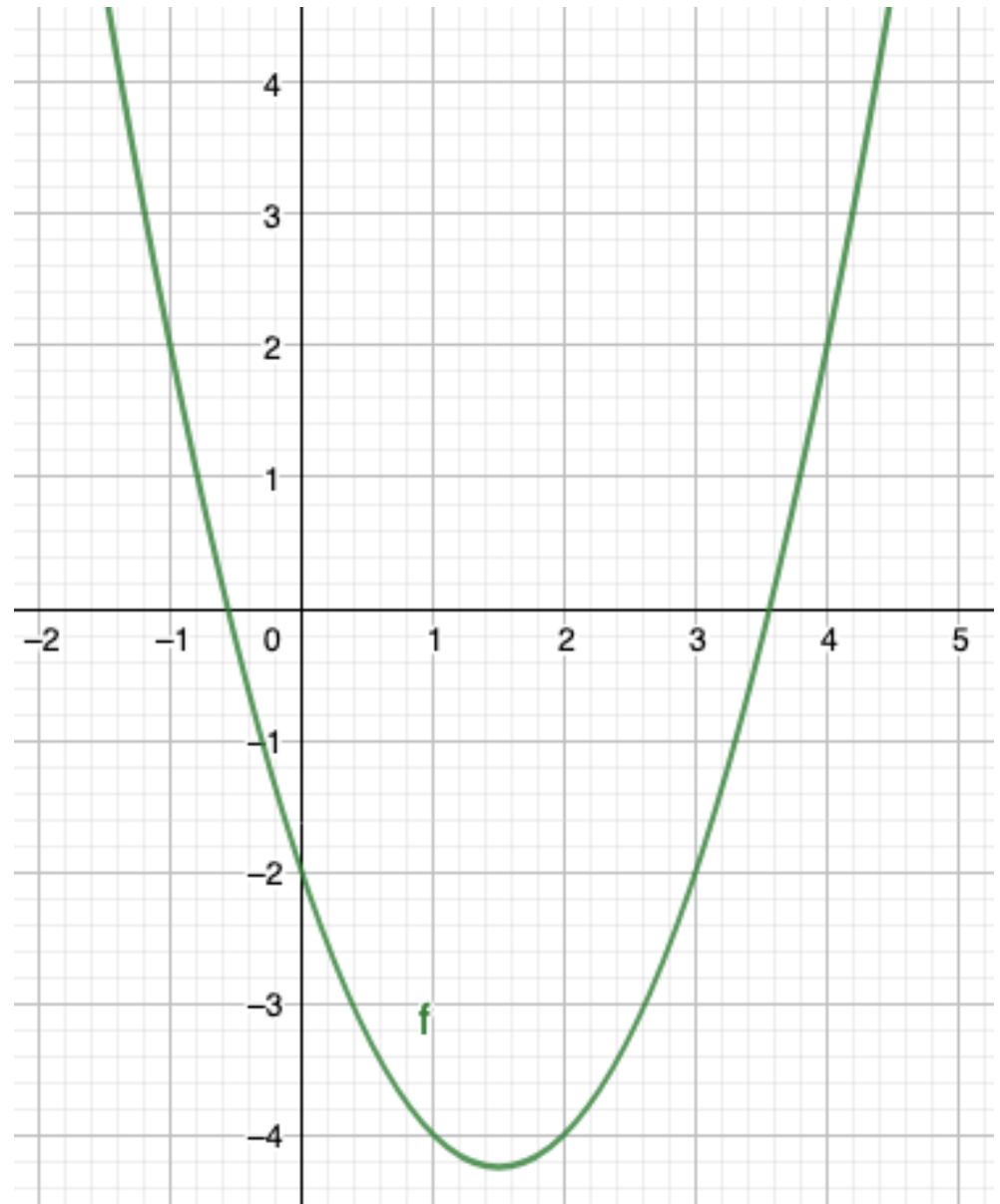
x	y		x'	y'
-4	-4		12	11
-1	-1		6	5
1	-3		2	9
3	-3		-2	9



1.2 - Transformations of Linear and Absolute Value Functions

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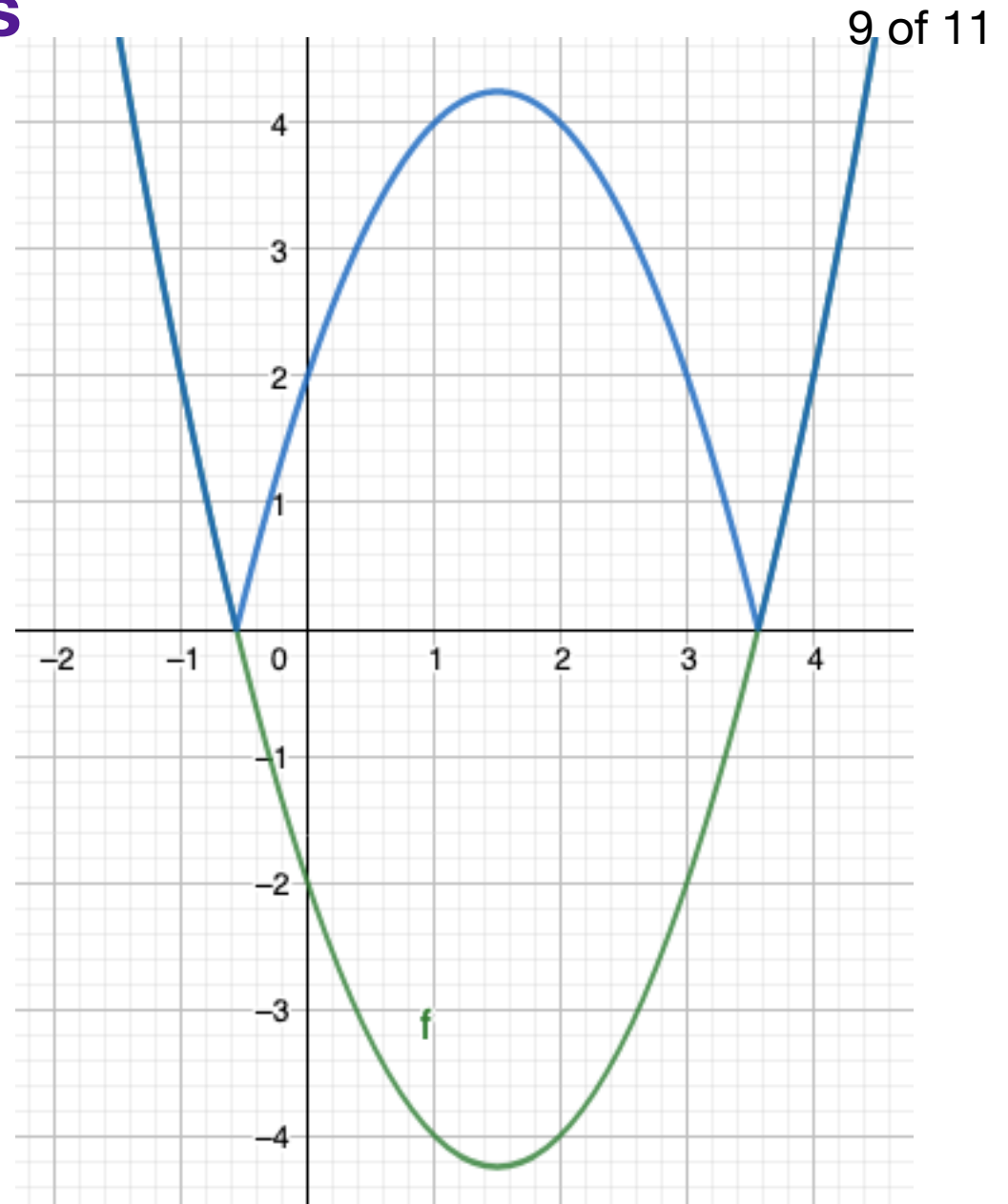
Reflections



What about $|f(x)|$?

1.2 - Transformations of Linear and Absolute Value Functions

Reflections

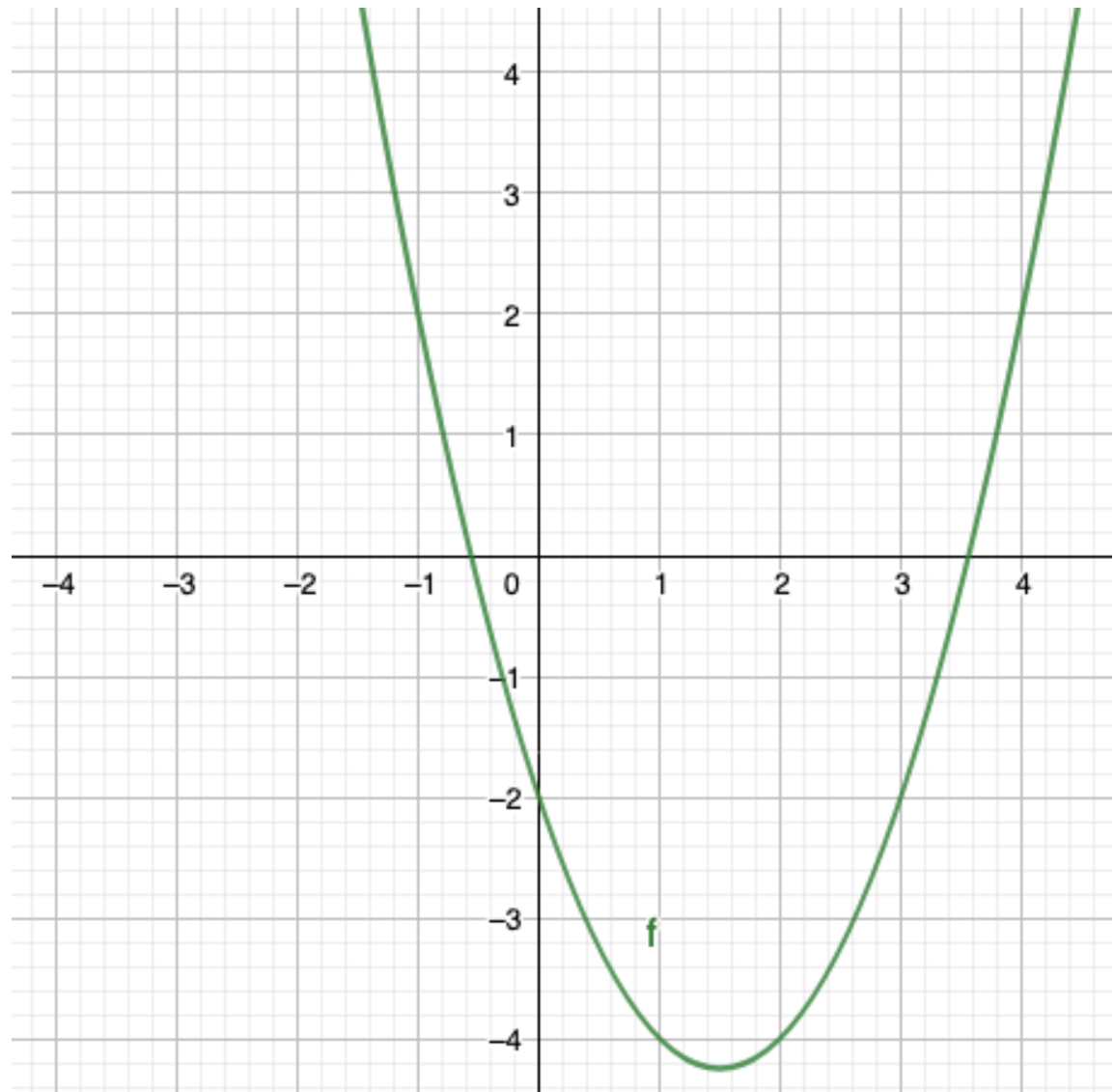


What about $|f(x)|$?

1.2 - Transformations of Linear and Absolute Value Functions

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Reflections

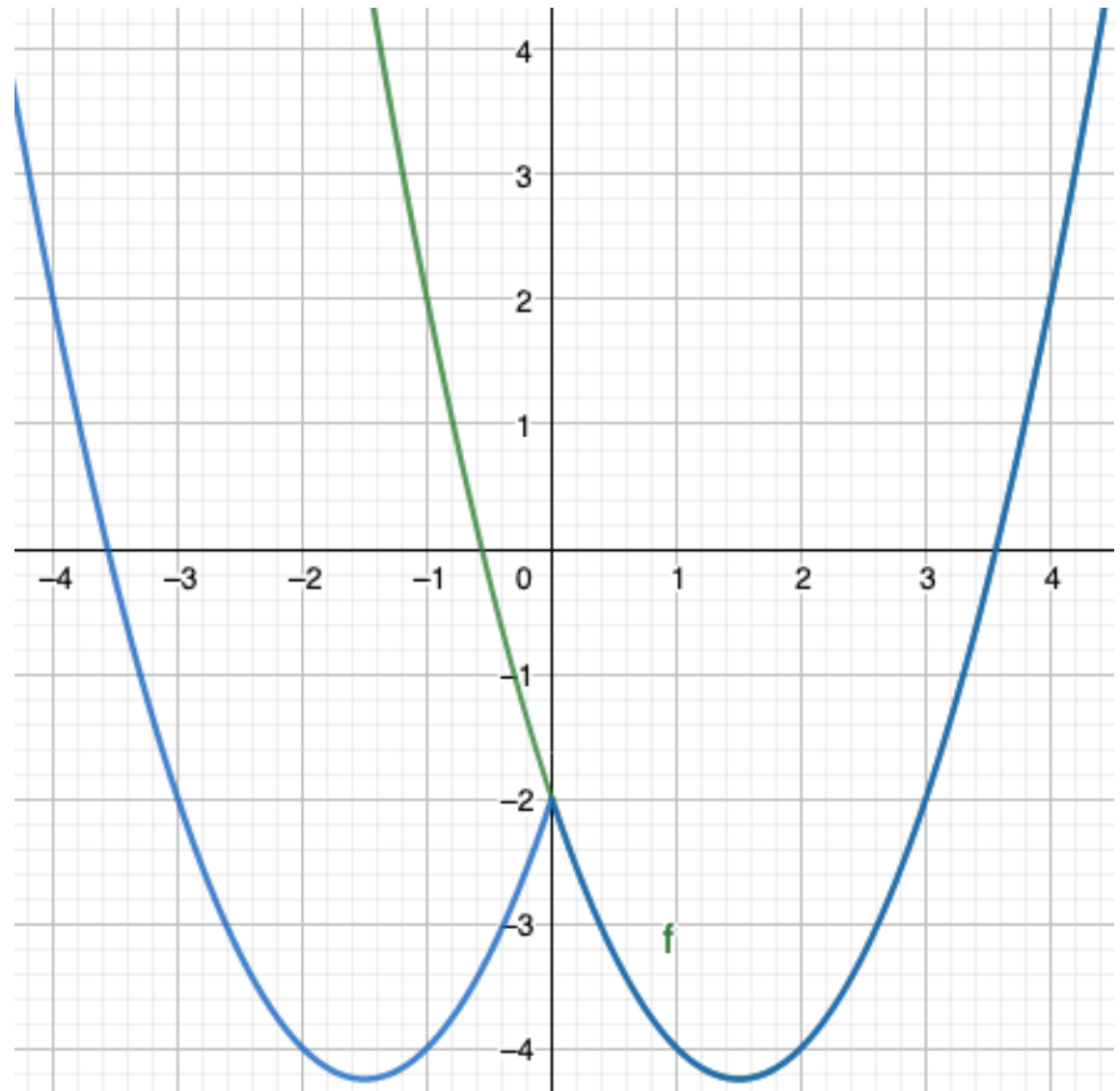


What about $f(|x|)$?

1.2 - Transformations of Linear and Absolute Value Functions

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Reflections



What about $f(|x|)$?

