

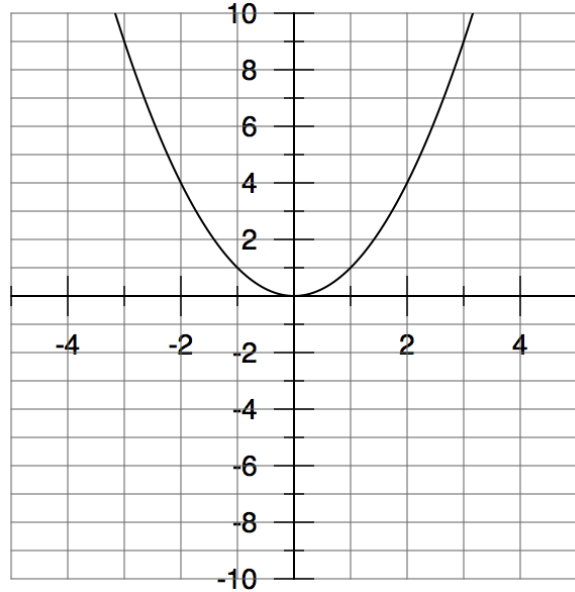
Reflections (Part 1)

These notes are intended as a summary of section 3.2 (p. 178 – 183) in your workbook. You should also read the section for more complete explanations and additional examples.

Reflections in the x -axis

On the axes pictured to the right, you will see the graph of $y = x^2$.

On the same axes, plot the graph of $y = -x^2$.



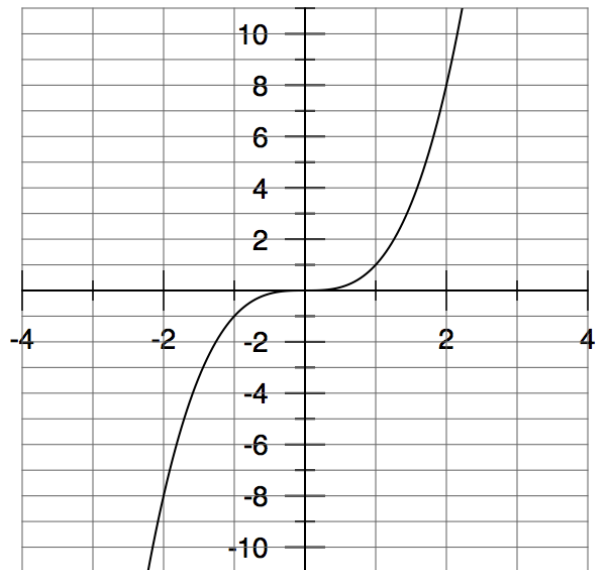
In general, the graph of $y = -f(x)$ is the image of the graph of $y = f(x)$ after a reflection in the x -axis.

Note: The easiest way to draw the reflection of a graph in the x -axis is to replace each y -coordinate of $y = f(x)$ with $-y$.

Reflections in the y -axis.

On the axes pictured to the right, you will see the graph of $y = x^3$.

On the same axes, plot the graph of $y = (-x)^3$.

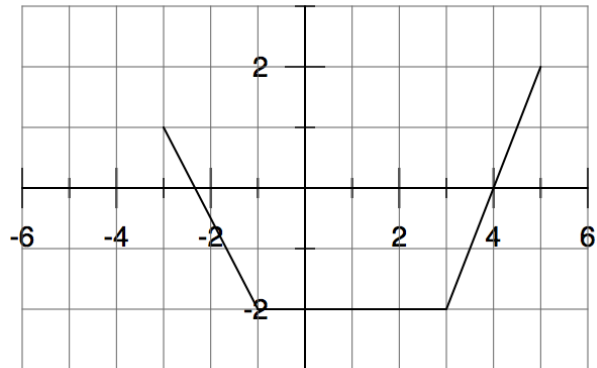


In general, the graph of $y = f(-x)$ is the image of the graph of $y = f(x)$ after a reflection in the y -axis.

Note: The easiest way to draw the reflection of a graph in the y -axis is to replace each x -coordinate of $y = f(x)$ with $-x$.

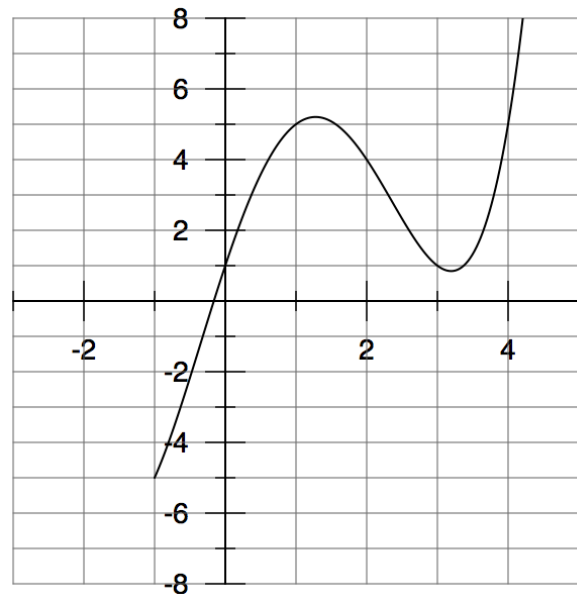
Example 1 (sidebar p. 180)

Here is the graph of $y = g(x)$. Sketch the image graph after a reflection in the y -axis. State the domain and range of each function.



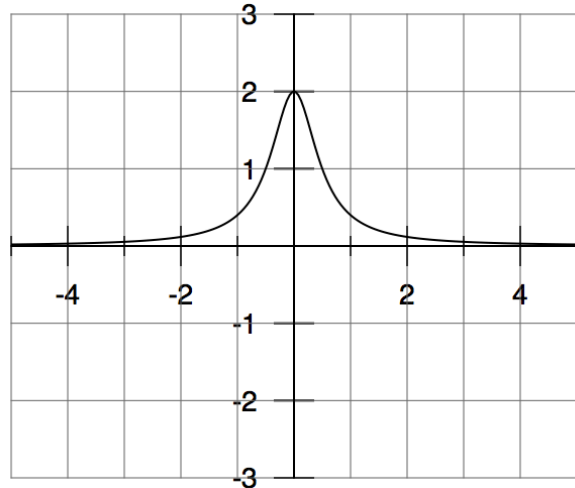
Example 2 (sidebar p. 181)

Here is the graph of $y = g(x)$. Sketch the graph of $y = -g(x)$. State the domain and range of each function.



Example 3 (sidebar p. 182)

The graph of $y = \frac{1}{-2x^2 - 0.5}$ was reflected in the x-axis and its image is shown. What is an equation of the image?



Homework: #3 – 13 in the exercises (p. 183 – 191). Answers on p. 191.