

Exercise 30

In Exercises 29–40, test for symmetry with respect to each axis and to the origin.

$$y = 9x - x^2$$

Solution

Replacing x with $-x$ changes the equation, so there's no symmetry with respect to the y -axis.

$$y = 9(-x) - (-x)^2 = -9x - x^2$$

Replacing y with $-y$ changes the equation, so there's no symmetry with respect to the x -axis.

$$-y = 9x - x^2 \rightarrow y = -9x + x^2$$

Replacing x with $-x$ and y with $-y$ changes the equation, so there's no symmetry with respect to the origin.

$$-y = 9(-x) - (-x)^2 \rightarrow -y = -9x - x^2 \rightarrow y = 9x + x^2$$

