Exercise 59

Exercises 59–68 tell in what direction and by what factor the graphs of the given functions are to be stretched or compressed. Give an equation for the stretched or compressed graph.

$$y = x^2 - 1, \quad \text{stretched vertically by a factor of 3}$$

Solution

Multiply the function by 3 to stretch it vertically by a factor of 3.

$$y = 3(x^2 - 1) = 3x^2 - 3$$