Exercise 15

Sketch the graph of f by hand and use your sketch to find the absolute and local maximum and minimum values of f. (Use the graphs and transformations of Sections 1.2 and 1.3.)

$$f(x) = \frac{1}{2}(3x - 1), \quad x \le 3$$

Solution

On the interval $-\infty < x \le 3$ there's only an absolute maximum:

$$f(3) = \frac{1}{2}[3(3) - 1] = 4.$$

This is illustrated in the graph of the function below.