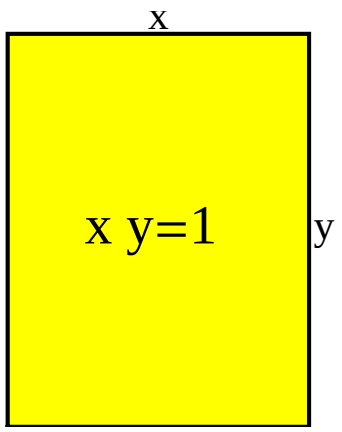
Lecture 11: Worksheet

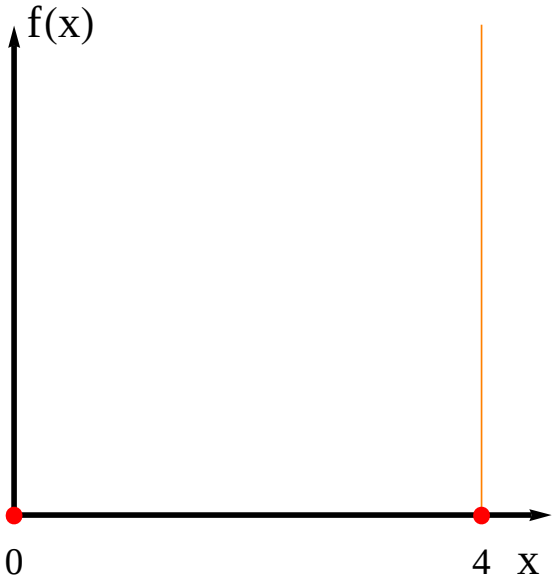
Critical points and extrema



In this worksheet we want to find out Which rectangle of fixed area $xy = 1$ has minimal circumference $2x + 2y$.

To solve this problem we have to extremize the function

$$f(x) = 2x + \frac{2}{x} .$$



1 Differentiate the function f. For which x is it continuous?

2 Find the critical points of f, the places where $f'(x) = 0$.

3 Sketch the graph of f on the interval $(0, 4]$.