

The goal of this exercise is to see how we can determine the slope of the tangent line to a function at a given point.

Let us consider the function  $f(x)$ , whose graph is shown below, and the point  $x_0 = 1$ . The point  $(x_0, f(x_0)) = (1, f(1))$  is indicated on the graph.

Find as many ways you can to approximate the slope of the tangent line at that point.

What are the pros and cons of each method?

What method gives the “best” approximation (if any)? Why?

