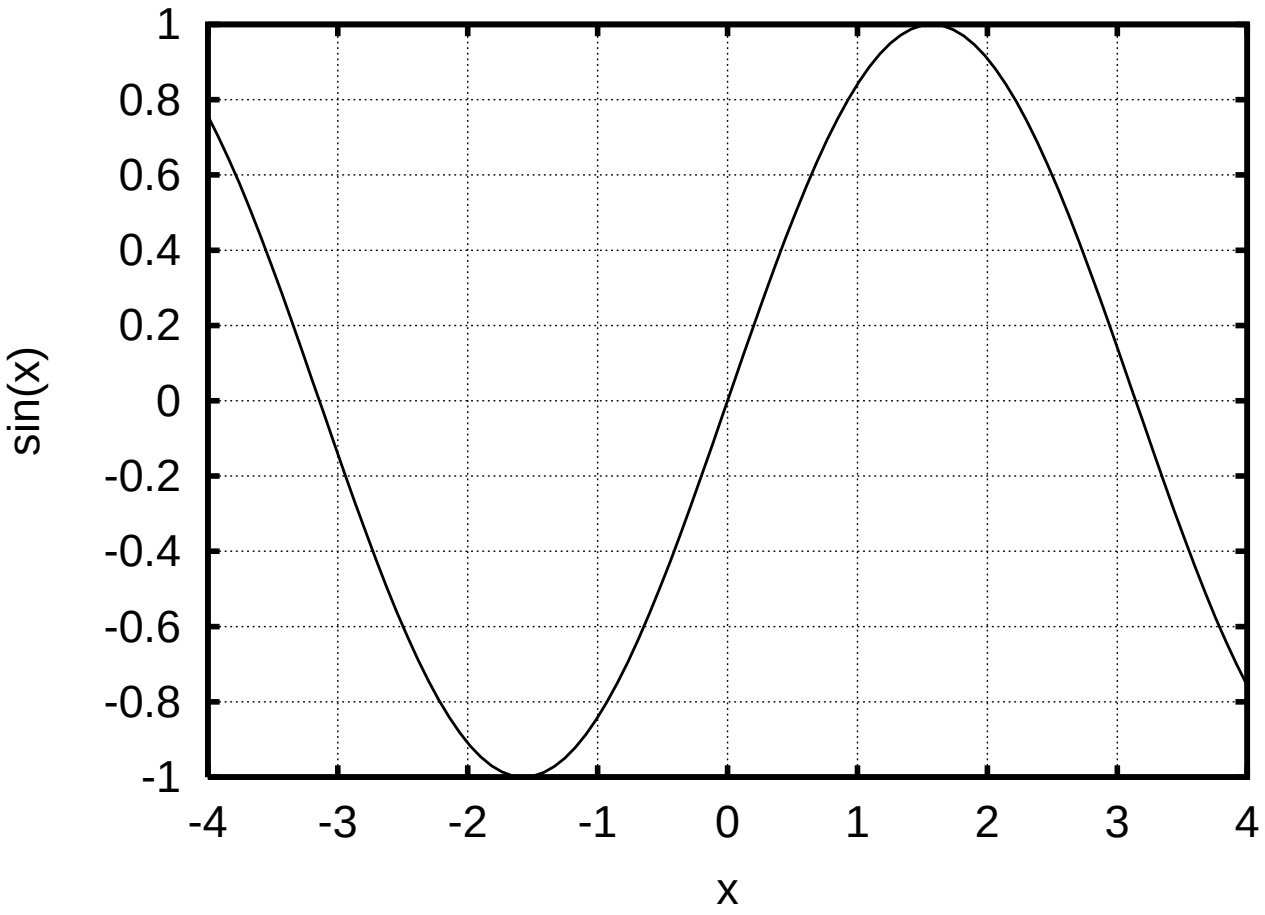
Chapter 2.2: The Derivative at a Point:
Determining the Derivative Graphically and Numerically
Calculus I
College of the Atlantic. 3 October 2022

1. Consider $g(x) = \sin(x)$. Using the graph below, estimate $g'(0)$.



2. Numerically estimate $g'(0)$. That is, start with the definition of the derivative. Then use your calculator to numerically evaluate the limit: see what happens as h gets smaller and smaller. **Use radians.** Do your answers for $g'(0)$ agree?

3. Numerically estimate $f'(3)$, for $f(x) = 3^x$.