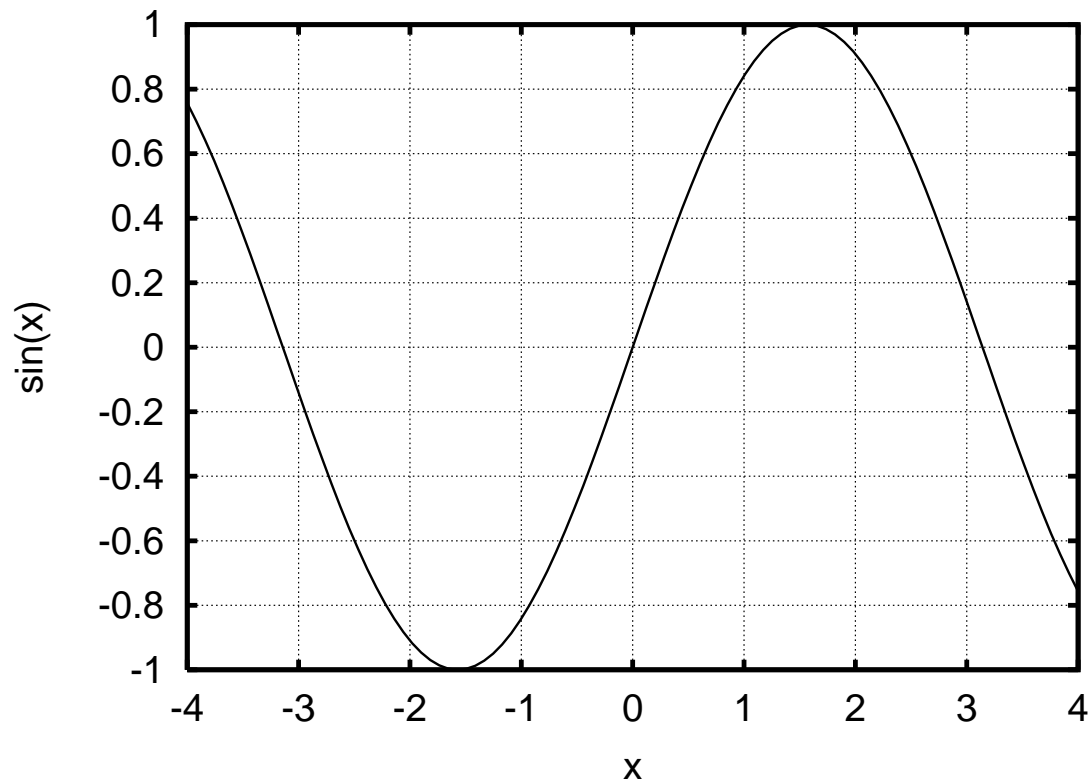# Chapter 2.2: The Derivative at a Point:
Determining the Derivative Graphically, Numerically, and Algebraically
## Calculus I
College of the Atlantic. Fall 2016

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. As always, use radians. Do your answers for $g'(0)$ agree?

3. Consider $f(x) = x^3$. Using the graph below, estimate $f'(2)$.
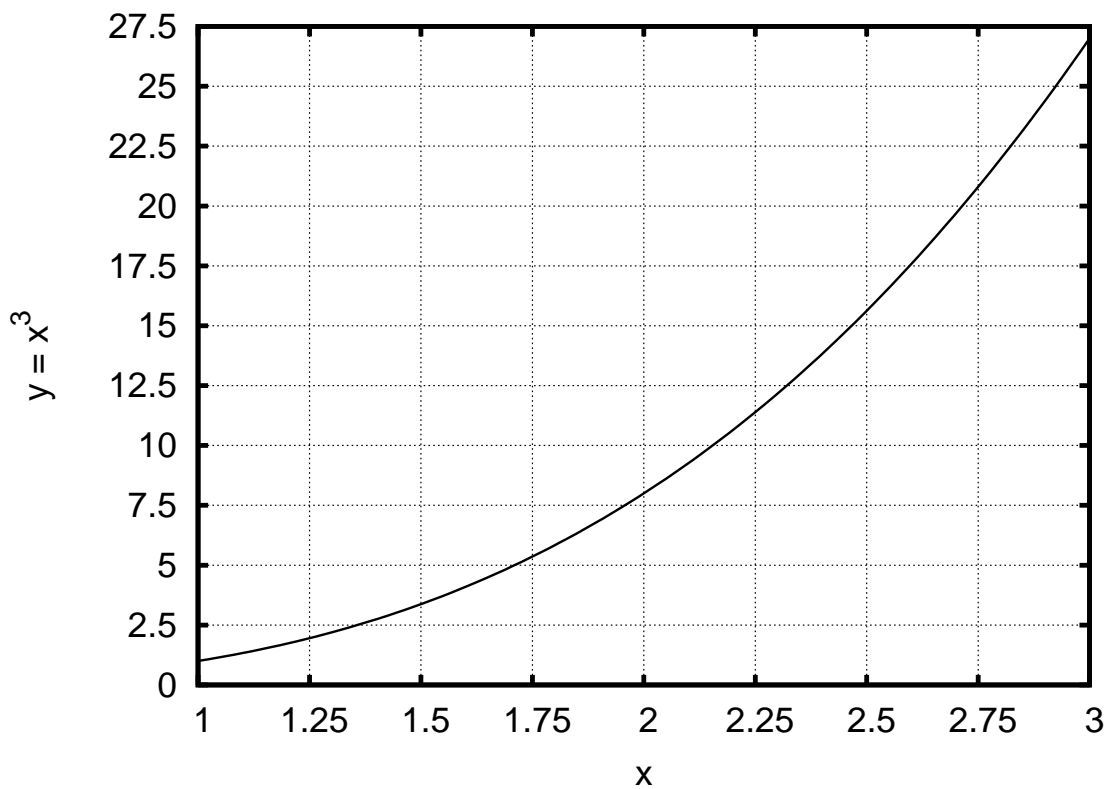
4. Determine $f'(2)$ numerically.

5. If you can, determine $f'(2)$ using algebra.