

AUTHOR 1 _____ ☐

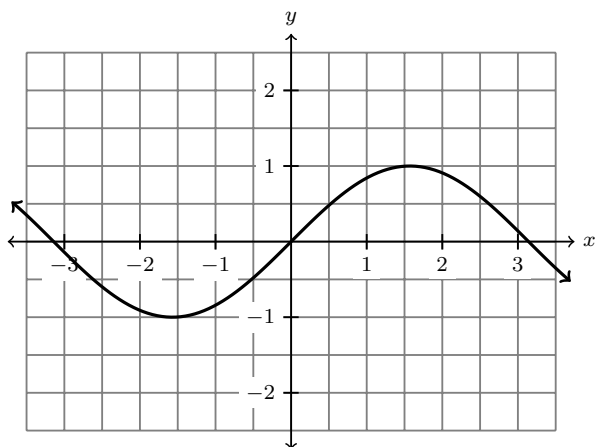
AUTHOR 2 _____ ☐

AUTHOR 3 _____ ☐

AUTHOR 4 _____ ☐

Group Work 09

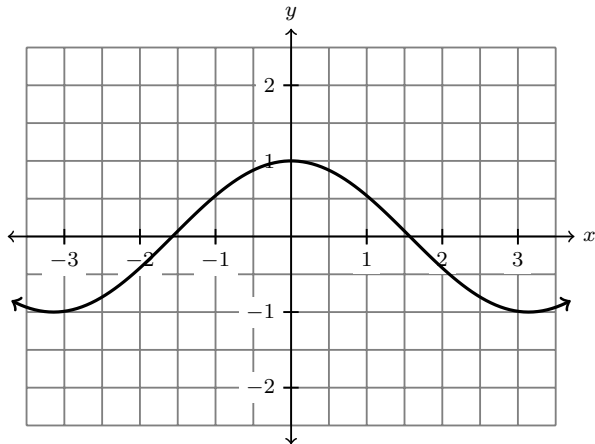
1. The graph of $y = \sin(x)$ is below.



- (a) What is the *geometric* meaning of $\frac{d}{dx}[\sin(x)]|_{x=0}$.

- (b) Use the graph of $y = \sin(x)$ to find $\frac{d}{dx}[\sin(x)]|_{x=0}$.

2. The graph of $y = \cos(x)$ is below.



- (a) What is the *geometric* meaning of $\frac{d}{dx}[\cos(x)]|_{x=0}$.

- (b) Use the graph of $y = \cos(x)$ to find $\frac{d}{dx}[\cos(x)]|_{x=0}$.

3. Find the derivative of $f(x) = \frac{\tan x + 1}{3x + \cos x}$

4. Evaluate the following derivatives.

(a) $\frac{d}{dx} [\cos(3x)]$

(b) $\frac{d}{dx} [e^{-4x}]$

(c) $\frac{d}{dx} \left[\sqrt[3]{x^3 + \frac{1}{x}} \right]$

(d) $\frac{d}{dx} [e^{7x} \sin(1 - x^\pi)]$

(e) $\frac{d}{dx} \left[\cos^5 \left(\frac{3x}{1 + \tan x} \right) \right]$