Fundamental Thoughts (Lecture Assignment)

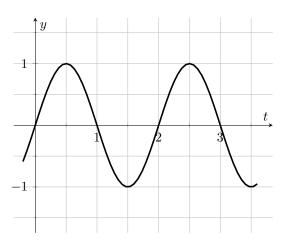
Complete this assignment and submit it to Gradescope by 4:00pm on your class day. You can print this sheet, or write on your own paper. Contact us if internet connections or other issues require alternate arrangements.

1. Evaluate the following:

(a)
$$\frac{d}{dx} \int_3^x \cos(e^t) dt$$

(b)
$$\frac{d}{dx} \int_{x}^{4} \cos\left(e^{t}\right) dt$$

- 2. Consider the function $g(x) = \int_1^x \sin(\pi t) dt$ with domain $0 \le x \le 3$.
 - (a) For which x is g(x) = 0?



(b) On which open intervals is g(x) decreasing?

One-Minute Questions: Write a sentence for each.

- A. What's one mathematical question you have after watching the videos?
- B. What's one interesting thing you learned from the book or videos?