

Closing Wed at 11pm: HW_1A, 1B, 1C

My office hours today are:

2:10-3:30pm in Padelford C-339

also try the Math Study Center

5.2 Note - Quick Bounds on Integrals

(This will help on HW_1C: 9,10)

Ex: Consider the area under

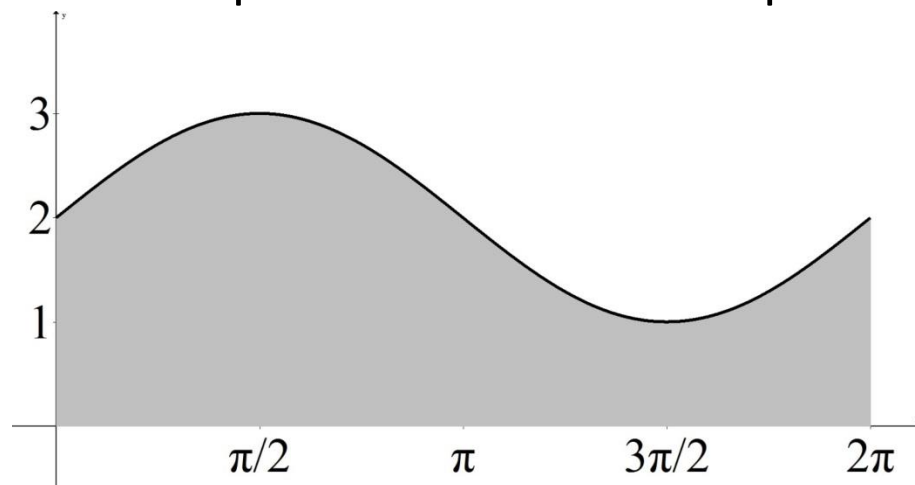
$$f(x) = \sin(x) + 2$$

on the interval $x = 0$ to $x = 2\pi$.

- What is the maximum of $f(x)$?
(call this M)
- What is the minimum of $f(x)$?
(call this m)
- Can you fill in these question marks with something you know to be true?

$$??? \leq \int_0^{2\pi} \sin(x) + 2 \, dx \leq ???$$

Here is a picture of the area in question



5.3 The Fundamental Theorem of Calculus

Motivational Task:

Consider the function $f(t) = 3t$.

Draw the graph and using area formulas you know, compute:

(a) $\int_0^1 f(t) dt$

(b) $\int_0^{10} f(t) dt$

(c) $g(x) = \int_0^x f(t) dt$

(d) Any observations?