## Definite integral

## November 16, 2016

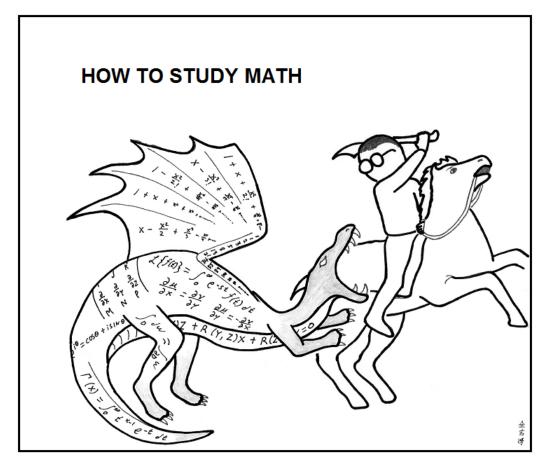
## **Problems**

**Problem 1.** Compute the integral  $\int_0^2 x^2 - 2x dx$  by definition.

**Problem 2.** Use the Min/Max inequality to estimate the value of  $\int_0^1 \frac{1}{x^2+1} dx$ .

**Problem 3.** Water is pouring out of a pipe at the rate of f(t) gallons/minute. You collect the water that flows from the pipe between t = 2 and t = 4. The amount of water you collect can be represented by:

- (a)  $\int_2^4 f(x)dx$
- (b) f(4) f(2)
- (c) (4-2)f(4)
- (d) the average of f(4) and f(2) times the amount of time that elapsed.



Don't just read it; fight it!

--- Paul R. Halmos