

Math 273 - Fall 2016

Homework 3

Due September 20, 2016

Fluidity and discontinuity are central to the reality in which we live. —Mary Catherine Bateson

Turn in:

- (1) Use the Limit Laws to explain why the function $w(t) = \frac{\cos(t+5)}{t+1}$ is continuous at 1.
- (2) Explain why the following function is discontinuous at 0. What type of discontinuity is it?

$$f(x) = \begin{cases} \cos x, & \text{if } x < 0 \\ 0, & \text{if } x = 0 \\ 1 - x^2, & \text{if } x > 0. \end{cases}$$

- (3) Do the following problems found in the textbook:

Problems 2.5.31, 2.5.51, 2.6.18, 2.6.22, 2.7.6, and 2.7.14.

Recommended (not to turn in): 2.5.44, 2.6.24, 2.6.36, 2.6.67, 2.7.7, 2.7.17.