

MATH 151 Homework 4

Due 2/1

Read Section 2.2.

Do Section 2.2 Exercises 1, 2, 5, 6, 12

Also, do the following exercises. Justify your answers with reasoning written in complete sentences.

SF8. True or False: As x increases to 100, the function $f(x) = \frac{1}{x}$ gets closer and closer to 0, as the limit as x goes to 100 of $f(x)$ is 0.

SF9. True or False: $\lim_{x \rightarrow a} f(x) = L$ means that if x_1 is closer to a than x_2 is, then $f(x_1)$ will be closer to L than $f(x_2)$ is.

SF10. You're trying to guess $\lim_{x \rightarrow 0} f(x)$. You plug in 0.1, 0.01, 0.001, ... and get $f(x) = 0$ for all these values. In fact, you're told that for all $n = 1, 2, 3, \dots$, $f\left(\frac{1}{10^n}\right) = 0$. True or False: Since the sequence 0.1, 0.01, 0.001, ... goes to 0, we know that $\lim_{x \rightarrow 0} f(x) = 0$.