1 | **Limit Laws**

Here 'em:

Limit Laws Suppose that c is a constant and the limits

$$\lim_{x \to a} f(x) \qquad \text{and} \qquad \lim_{x \to a} g(x)$$

exist. Then

1. $\lim_{x \to a} [f(x) + g(x)] = \lim_{x \to a} f(x) + \lim_{x \to a} g(x)$
2. $\lim_{x \to a} [f(x) - g(x)] = \lim_{x \to a} f(x) - \lim_{x \to a} g(x)$
3. $\lim_{x \to a} [cf(x)] = c \lim_{x \to a} f(x)$
4. $\lim_{x \to a} [f(x)\, g(x)] = \lim_{x \to a} f(x) \cdot \lim_{x \to a} g(x)$
5. $\lim_{x \to a} \dfrac{f(x)}{g(x)} = \dfrac{\lim_{x \to a} f(x)}{\lim_{x \to a} g(x)}$ if $\lim_{x \to a} g(x) \neq 0$
6. $\lim_{x \to a} f\big(g(x)\big) = f\left(\lim_{x \to a} g(x)\right)$
7. $\lim_{x \to a} f(x)^n = \left(\lim_{x \to a} f(x)\right)^n$

Figure 1: Screen Shot 2020-09-02 at 1.55.13 PM.png

1.1 | **Trig Limits + Squeeze Theorem!**

Very logical theorem — if two things "enveloping functions" approach the same value, and the function in the middle will approach the same value

#disorganized

- Dampening oscellation
- Could be modeled with $\frac{\sin x}{x}$

3 The Squeeze Theorem If $f(x) \leq g(x) \leq h(x)$ when x is near a (except possibly at a) and

$$\lim_{x \to a} f(x) = \lim_{x \to a} h(x) = L$$

then

$$\lim_{x \to a} g(x) = L$$

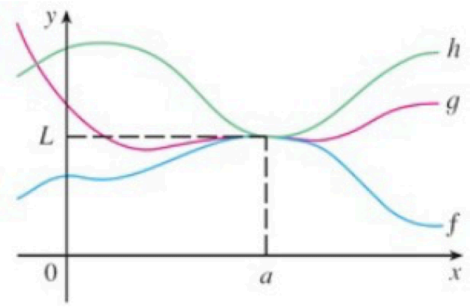

Figure 2: Screen Shot 2020-09-11 at 1.20.05 PM.png