

Special Trig Limits

p. 98 - 105 (2.2)

8

The Squeeze Theorem: If $h(x) \leq f(x) \leq g(x)$ for all x in an open interval containing c , except possibly at c itself, and if then

$\lim_{x \rightarrow c} (h(x)) = L = \lim_{x \rightarrow c} (g(x))$, then $\lim_{x \rightarrow c} (f(x))$ exists and $= L$.

Special Trig Limits

$$1. \lim_{x \rightarrow 0} \frac{\sin(x)}{x} = 1$$

$$2. \lim_{x \rightarrow 0} \frac{1 - \cos(x)}{x} = 0$$

Find the limits:

$$1. \lim_{x \rightarrow 0} \frac{\sin(5x)}{2x}$$

$$**2. \lim_{\theta \rightarrow \pi} (\theta \sec(\theta))$$

$$**3. \lim_{\theta \rightarrow 0} \frac{1 - \cos(\theta)}{2\sin^2(\theta)}$$