

Evaluate this limit using the Squeezing Theorem.

$$\lim_{x \rightarrow 0} x^2 \sin \frac{1}{x}$$

Evaluate $\lim_{x \rightarrow 1} f(x)$ using the Squeezing Theorem given that

$$5 \leq f(x) \leq x^2 + 6x - 2$$