Additional Questions for Homework on Section 2.2.

For each of the following, use the Sandwich Theorem to determine the following limit. [Hint: First determine a helpful "sandwich" inequality, then use the Sandwich Theorem.]

A. $\lim\limits_{x \to 0} x^4 \cos\left(\frac{1}{x}\right)$

B. $\lim\limits_{x \to 0} x \sin\left(\frac{1}{x}\right)$

C. $\lim\limits_{x \to 0} 4 + 3x + 5x^2 \sin\left(\frac{1}{x}\right)$

D. $\lim\limits_{x \to 0} \cos x + \sin\left(\frac{1}{x}\right) \sin x$