Show all work and circle/box your final answer. All answers must be simplified unless stated otherwise. Turn in when done.

1. (*0 points*) Evaluate the following limits:

(a) $\lim\limits_{x \to 3}(4x - 5)$

(b) $\lim\limits_{x \to 2} \dfrac{x + 3}{x + 6}$

(c) $\lim\limits_{y \to -3}(5 - y)^{4/3}$

(d) $\lim\limits_{x \to 3} \dfrac{x^2 - x - 6}{x - 3}$

(e) $\lim\limits_{x \to -2} \dfrac{-2x - 4}{x^3 + 2x^2}$

(f) $\lim\limits_{x \to 1} \dfrac{x - 1}{\sqrt{x + 3} - 2}$

2. (*0 points*) It can be shown that the inequalities

$$1 - \frac{x^2}{6} < \frac{x \sin x}{2 - 2 \cos x} < 1$$

hold for all values of x close to zero. What, if anything, does this tell you about

$$\lim_{x \to 0} \frac{x \sin x}{2 - 2 \cos x}?$$

Give reasons for your answer.