(a): Compute the following limit (if it exists), making your steps clear: \( \lim_{h \to 0} \frac{1}{3+h} - \frac{1}{3} \).

\[
\lim_{h \to 0} \frac{1}{3+h} - \frac{1}{3} = \frac{3 - (3+h)}{3(3+h)} = \frac{-h}{3(3+h)}
\]

This is undefined, so you can't substitute 0.

(b): Compute the following limit if it exists, and if it does not exist but is infinite, describe the infinite limit and explain (factor the denominator):

\[
\lim_{x \to 1} \frac{x - 4}{x^2 - 3x + 2}
\]

\[
\lim_{x \to 1} \frac{x - 4}{x^2 - 3x + 2} = \lim_{x \to 1} \frac{x - 4}{(x-2)(x-1)}
\]

\[
= \lim_{x \to 1} \frac{1 - 3^4}{(1-2)(1-1)} = \frac{-2}{(-1)(-0.001)} = -\infty
\]

Correct answer!