Math 241 Quiz 2

Name: _____

1. Find the limits. Use an appropriate language/technique.

2 (a) $\lim_{x\to\infty} \frac{6x^2-x-5}{x^2+1}$ $= \lim_{x\to\infty} \frac{6x^2-x-5}{x^2+1} \cdot \frac{\frac{1}{x^2}}{\frac{1}{x^2}} = \lim_{x\to\infty} \frac{6-\frac{1}{x}-\frac{5}{x^2}}{1+\frac{1}{x^2}}$

$= \lim_{x\to\infty} \frac{6}{1} = 6$

2 (b) $\lim_{x\to 1+} \frac{6x+1}{(x-1)(x-2)}$ $= -\infty$

$6^+ \quad -1$

1 (c) $\lim_{x\to\infty} \frac{3\sin x}{x}$ [Hint: Write out the Sandwich Theorem reasoning.]

$= 3 \lim_{x\to\infty} \frac{\sin x}{x} = 3 \cdot 1 = 3$