Quiz 3 Solution (Version B)

1. Find the limit.

$$\lim_{x \to \infty} \frac{2 - 3x^2}{4x^2 + 5x}$$

$$\lim_{x \to \infty} \frac{2 - 3x^2}{4x^2 + 5x} = \lim_{x \to \infty} \frac{2/x^2 - 3}{4 + 5/x}$$
$$= -3/4.$$

2. The limit represents the derivative $f'(a)$ of some function f at some point a. What is the function f and what is the point a? You do not need to evaluate the limit.

$$\lim_{h \to 0} \frac{\sqrt[3]{8 + h} - 2}{h}$$

The function is $f(x) = \sqrt[3]{x}$, and $a = 8$.