

Quiz #2**Name:** _____**StudentID:** _____**Major:** _____**Time:** 20 minutes.

Justify your solutions and show all your steps. Write down formulae used. Make sure to look on the back side of this sheet.

Find the limits if they exist:

1.

$$\lim_{x \rightarrow -\frac{1}{2}} \frac{4x - 2}{4x^2 + 1}$$

2.

$$\lim_{h \rightarrow 0} \frac{(x + h)^3 - x^3}{h}$$

3.

$$\lim_{x \rightarrow 3} g(x) \cdot f(x), \quad \text{if} \quad \lim_{x \rightarrow 3} f(x) = 4 \quad \text{and} \quad \lim_{x \rightarrow 3} g(x) = -2$$

4.

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