Calculus 12
2-3 Questions

1. Find the following limits.

a) $\lim_{x \to -2} \frac{x+2}{x^2-4}$

b) $\lim_{x \to 1} \frac{x^2-3x+2}{x-1}$

c) $\lim_{x \to 3} \frac{x^2-2x-3}{x^2-4x+3}$

d) $\lim_{x \to -2} \frac{2x^2+5x+2}{x^2-2x-8}$

e) $\lim_{x \to 1} \frac{x^3-1}{x^2-1}$

f) $\lim_{x \to -3} \frac{x+3}{x^3+27}$

g) $\lim_{x \to 9} \frac{x-9}{\sqrt{x}-3}$

h) $\lim_{x \to 2} \frac{\frac{1}{x}-\frac{1}{2}}{x-2}$

2. State the value of each limit.

a) $\lim_{h \to 0} \frac{(4+h)^3-64}{h}$

b) $\lim_{h \to 0} \frac{(h-2)^2-4}{h}$

c) $\lim_{h \to 0} \frac{\frac{1}{1+h}-1}{h}$

d) $\lim_{h \to 0} \frac{(2+h)^4-16}{h}$

e) $\lim_{h \to 0} \frac{\sqrt{9+h}-3}{h}$

f) $\lim_{h \to 0} \frac{\frac{1}{(2+h)^2}-\frac{1}{4}}{h}$