

QUIZ (1) FORM B

Name: **KEY** ID # **KEY** Sec # (13) (28)

PLEASE give complete, neat answers and show ALL your work

1) Find $\lim_{x \rightarrow +\infty} \frac{5x^2 - 4x}{2x^2 + 3}$.

(HW # 12, page 136)

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

$$= \lim_{x \rightarrow +\infty} \frac{5 - \frac{4}{x}}{2 + \frac{3}{x^2}} = \frac{5 - 0}{2 + 0} = \frac{5}{2}$$

2) Find $\lim_{x \rightarrow 2^-} \frac{x}{x^2 - 4}$.

(HW # 18, page 130 (similar))

$$\lim_{x \rightarrow 2^-} \frac{x}{x^2 - 4} = \lim_{x \rightarrow 2^-} \frac{x}{(x-2)(x+2)}$$

choose: $x = 1.99 \Rightarrow \frac{x}{(x-2)(x+2)} = \frac{1.99}{(-0.01)(3.99)}$
= negative

$$\Rightarrow \lim_{x \rightarrow 2^-} \frac{x}{x^2 - 4} = -\infty$$