

1. Find  $\lim_{x \rightarrow 2} \frac{\frac{1}{x} - \frac{1}{2}}{x - 2}$

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

3.  $\lim_{x \rightarrow \infty} \frac{\sqrt{9x^2 + 3x - 2}}{2x + 5}$

4. Let  $f(x) = \begin{cases} x + 4 & \text{if } x \leq -4 \\ -x - 4 & \text{if } x > -4 \end{cases}$   
Is  $f$  continuous at  $x = -4$ ?