

Math 1300-002: L'Hôpital's Rule Practice

Compute the following limits using l'Hôpital's Rule:

- $\lim_{x \rightarrow \infty} \frac{7x^2 - 10x + 1}{3x^2 + 5}$

- $\lim_{x \rightarrow 0^-} \left(\frac{3}{x} - \frac{1}{e^x - 1} \right)$

- $\lim_{x \rightarrow 0} \left(\frac{1}{x} - \frac{1}{\sin(x)} \right)$

- $\lim_{x \rightarrow 0} \left(\frac{1}{x} - \frac{1}{e^x - 1} \right)$

- $\lim_{x \rightarrow \infty} \frac{\ln(3x)}{5 \ln(2x + 1)}$

- $\lim_{x \rightarrow \pi^+} \sin(x) \ln(x - \pi)$

- $\lim_{x \rightarrow \infty} x^{\frac{1}{x}}$

- $\lim_{x \rightarrow 6^-} (x - 5)^{\frac{x-2}{x-6}}$