
Apply L'Hospital rules to find the following limits

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

2. $\lim_{x \rightarrow 0} \frac{\ln(1 + x)}{\sqrt{x}} =$

3. $\lim_{x \rightarrow 0} \frac{1 - \cos x}{x^2} =$

4. $\lim_{x \rightarrow 0} \frac{x - \sin x}{x^3} =$

5. $\lim_{x \rightarrow \pi} \frac{\sin x}{x - \pi} =$

6. $\lim_{x \rightarrow +\infty} \frac{\ln x}{x} =$

7. $\lim_{x \rightarrow 0^+} x \ln x =$

8. $\lim_{x \rightarrow 0^+} x^x =$

9. $\lim_{x \rightarrow 0^+} (1 + ax)^{\frac{1}{x}} =$

10. $\lim_{x \rightarrow 0^+} \frac{x^2 \cos \frac{1}{x}}{\ln(1 + \sqrt{x})} =$
