

Limit practice

Evaluate the following limits. Show all your work.

1.

$$\lim_{x \rightarrow 7} \frac{\ln(x-3)}{5^x}$$

2.

$$\lim_{x \rightarrow 0} \sqrt{x^3 + x^2} \sin\left(\frac{\pi}{x}\right)$$

3.

$$\lim_{h \rightarrow 0} \frac{(3+h)^{-1} - 3^{-1}}{h}$$

4.

$$\lim_{t \rightarrow \frac{\pi}{2}} \left(\left(t - \frac{\pi}{2} \right) \sin(t) \right)$$

5.

$$\lim_{x \rightarrow 0^-} \frac{|x|}{x}$$

6.

$$\lim_{x \rightarrow 0^+} (\sqrt{x}[1 + \sin^2(2\pi/x)])$$