

Limits Review II

1. $\lim_{x \rightarrow 3} \frac{|x-3|}{x-3}$

5. $\lim_{x \rightarrow 0} \frac{(x+3)^3 - 27}{x}$

2. $\lim_{x \rightarrow \infty} \sqrt{x^2 + 2} - x$

6. $\lim_{x \rightarrow -\infty} \frac{2x^2 + 3x + 5}{3x^2 + 4x - 7}$

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

7. $\lim_{x \rightarrow 3} \frac{x^2 - 9}{x^2 - x - 6}$

4. $\lim_{x \rightarrow 25} \frac{\sqrt{x} - 5}{x - 25}$

8. $\lim_{x \rightarrow 1^+} \begin{cases} 4 - x^2, & x \leq 1 \\ 3x - 1, & x > 1 \end{cases}$

$$9. \lim_{x \rightarrow \infty} e^{-x} \sin x$$

$$14. \lim_{x \rightarrow \infty} \arctan \left(\frac{x^{4/5} + x^{5/4} + 1}{x^{8/7} + x^{7/8}} \right) =$$

$$10. \lim_{x \rightarrow -\infty} \arctan x$$

$$15. \lim_{x \rightarrow \frac{\pi}{4}^-} \ln x \sec(2x)$$

$$11. \lim_{x \rightarrow -\infty} \frac{x+3}{\sqrt{6x^2+5}}$$

$$16. \lim_{x \rightarrow \pi} \cot x$$

$$12. \lim_{x \rightarrow 0} \frac{\frac{1}{x+4} - \frac{1}{4}}{x}$$

$$17. \lim_{x \rightarrow \infty} \frac{2-11x^3}{4x^2+5x+3}$$

$$13. \lim_{x \rightarrow 1^-} \cot(\ln x)$$

$$18. \lim_{x \rightarrow 0} (2^x - \arcsin x - 4)$$