

Even More Limits

Directions: Find each limit or state that it does not exist. If no work can be shown for a limit, explain how you arrived at your answer.

$$1. \lim_{x \rightarrow 4} \frac{3\sqrt[3]{(x+4)^2} - 6\sqrt[3]{x+4}}{\sqrt[3]{(x+4)^2} - 4}$$

$$2. \lim_{x \rightarrow 0} \frac{x}{\sqrt[3]{(x+8)^2} - \sqrt[3]{x+8} - 2}$$

$$3. \lim_{x \rightarrow \infty} \ln\left(\frac{-3}{x^2 - 4}\right)$$

$$4. \lim_{x \rightarrow -\infty} \ln(2 + e^x)$$

$$5. \lim_{x \rightarrow -\infty} \ln(e^x + x^2)$$

$$6. \lim_{x \rightarrow -\infty} e^{4x-3}$$

$$7. \lim_{x \rightarrow \infty} 2^{\frac{1}{x} + x}$$

$$8. \lim_{x \rightarrow -\infty} \frac{\sqrt{2x^2+5}}{4x-3}$$

$$9. \lim_{x \rightarrow \infty} \frac{\sqrt{9x^2+x+2}}{2x-1}$$

$$10. \lim_{x \rightarrow -\infty} \sqrt{\frac{25x^2-4}{x^2+1}}$$

$$11. \lim_{x \rightarrow -\infty} \frac{3x+8}{\sqrt{36x^2-5}}$$

$$12. \lim_{x \rightarrow \infty} \frac{x^{999}}{2^x}$$

$$13. \lim_{x \rightarrow \infty} \frac{\sqrt[4]{x}}{\log_5 x}$$

$$14. \lim_{x \rightarrow \infty} \frac{x^5}{\sqrt{x}}$$

$$15. \lim_{x \rightarrow \infty} \frac{\ln x}{e^x}$$