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$$4) \lim_{x \rightarrow 1} \frac{\sqrt[3]{x} - 1}{x - 1}$$

$$49) \lim_{x \rightarrow 1} \frac{x^3 - 1}{4x^3 - x - 3}$$

$$A) \lim_{x \rightarrow \infty} \frac{x^3 - 1}{4x^3 - x - 3} = \frac{\infty}{\infty}$$

$$\lim_{x \rightarrow \infty} \frac{3x^2}{12x^2 - 1} = \frac{\infty}{\infty}$$

$$\lim_{x \rightarrow \infty} \frac{6x}{24x} = \frac{\infty}{\infty}$$

$$\lim_{x \rightarrow \infty} \frac{6}{24} = \frac{1}{4}$$

$$35) \lim_{x \rightarrow \infty} \frac{\log_2(x)}{\log_2(x+3)} = \frac{\infty}{\infty}$$

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

$$\lim_{x \rightarrow \infty} \frac{(x+3) \cdot \ln 3}{x \ln 2} = \frac{\infty}{\infty}$$

$$\lim_{x \rightarrow \infty} \frac{\ln 3}{\ln 2} = \frac{\ln 3}{\ln 2}$$

$$27) \lim_{x \rightarrow \infty} \frac{\ln(x^5)}{x} = \frac{\infty}{\infty}$$

$$\lim_{x \rightarrow \infty} \frac{\frac{1}{x^5 \cdot \ln e} \cdot 5x^4}{1} = \frac{5}{x}$$

$$\lim_{x \rightarrow \infty} \frac{5}{x} = 0$$

$$33) \lim_{x \rightarrow 0} \frac{\sin(x^2)}{x}$$