

Compute the following limits (think about the *theorems* you use).

$$a) \lim_{x \rightarrow 1} \frac{x^3 - 1}{(x - 1)^2}$$

$$b) \lim_{x \rightarrow -2} \frac{x^3 + 8}{x + 2}$$

$$c) \lim_{x \rightarrow 1} \frac{x^3 - 2x^2 + 2x - 1}{x^3 - 1}$$

$$d) \lim_{x \rightarrow 8} \frac{\sqrt[3]{x} - 2}{x - 8}$$

$$e) \lim_{x \rightarrow -1} \frac{\frac{1}{x} + 1}{x + 1}$$

$$f) \lim_{x \rightarrow a} \frac{x^n - a^n}{x - a}$$

$$g) \lim_{x \rightarrow 2} \frac{\sqrt{2} - \sqrt{x}}{2 - x}$$

$$h) \lim_{x \rightarrow 0} \frac{1 - \sqrt{1 - x^2}}{x^2}$$

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