Evalue cada uno de los siguientes limites si esto existen

$$\lim_{x\to -2} \frac{x+2}{x^3+8}$$

$$= \lim_{x\to -2} \frac{\cancel{x+2}}{\cancel{(x+2)}(x^2-2x+4)}$$

$$= \lim_{x\to -2} \frac{1}{x^2-2x+4}$$

$$= \frac{1}{(-2)^2-2(-2)+4} = \frac{1}{12}$$

$$\lim_{t\to 0} \frac{\sqrt{1+t}-\sqrt{1-t}}{t}$$

$$= \lim_{t\to 0} \frac{0}{t} = 0$$

El limite no existe

$$\lim_{h \to 0} \frac{\sqrt{9+h}-3}{h} \cdot \frac{\sqrt{9+h}+3}{\sqrt{9+h}+3}$$

$$= \lim_{h \to 0} \frac{1}{\sqrt{h+9}+3}$$

$$= \frac{1}{\sqrt{0+9}+3} = \frac{1}{6}$$

$$\lim_{h \to 0} \frac{(x+h)^3 - x^3}{h}$$

$$= \lim_{h \to 0} \frac{x^3 + 3hx^2 + 3h^2x + h^3 - x^3}{h}$$

$$= \lim_{h \to 0} \frac{h(3x^2 + 3hx + h^2)}{h}$$

$$= \lim_{h \to 0} 3x^2 + 3hx + h^2$$

$$= 3x^2 + 3(0)x + 0^2 = 3x^2$$

$$\lim_{x \to -4} \frac{\frac{1}{4} + \frac{1}{x}}{4 + x} \qquad \frac{\frac{x+4}{4x}}{4+x}$$

$$= \lim_{x \to -4} \frac{1}{4x}$$

$$= \frac{1}{4(-4)} = -\frac{1}{16}$$