

# CÁLCULO DIFERENCIAL.-

## TAREA 6

Nombre :

Ingeniero.

Obten los siguientes limites.

1-  $\lim_{x \rightarrow \infty} \frac{7x+8}{4x+3} =$

$$\frac{\frac{7x}{x} + \frac{8}{x}}{\frac{4x}{x} + \frac{3}{x}} = \frac{7}{4} //$$

6-  $\lim_{y \rightarrow \infty} \frac{3 + \frac{2}{y^3} - \frac{3y^4}{y^4}}{4y^4 - \frac{5}{y^2} - 3} =$

$$\frac{\frac{3}{y^4} + \frac{2}{y^4} - \frac{3y^4}{y^4}}{\frac{4y^4}{y^4} - \frac{5}{y^4} - \frac{3}{y^4}} = \lim_{y \rightarrow \infty} \frac{\frac{3}{y^4} + \frac{2}{y^4} - 3}{9 - \frac{5}{y^2} - \frac{3}{y^4}} = \frac{-\frac{3}{9}}{\frac{3}{3}} = -\frac{1}{3} //$$

11-  $\lim_{x \rightarrow \infty} \frac{11x - 6}{4 - 6x} =$

$$\lim_{x \rightarrow \infty} \frac{\frac{11x}{x} - \frac{6}{x}}{\frac{4}{x} - \frac{6x}{x}} = \lim_{x \rightarrow \infty} \frac{11}{6} //$$

• Encuentre las ecuaciones de las asíntotas horizontales

$$1- y = \frac{2x+3}{4x-5} = \lim_{x \rightarrow \infty} \frac{\frac{2x}{x} + \frac{3}{x}}{\frac{4x}{x} - \frac{5}{x}} = \frac{2 + \frac{3}{x}}{4 - \frac{5}{x}} = \frac{\lim_{x \rightarrow \infty} 2 + \lim_{x \rightarrow \infty} \frac{3}{x}}{\lim_{x \rightarrow \infty} 4 - \lim_{x \rightarrow \infty} \frac{5}{x}} = \frac{2}{4} = \frac{1}{2}$$

$$6- y = \frac{ax+b}{cx-d} = \lim_{x \rightarrow \infty} \frac{\frac{ax}{x} + \frac{b}{x}}{\frac{cx}{x} - \frac{d}{x}} = \lim_{x \rightarrow \infty} \frac{a + \frac{b}{x}}{c - \frac{d}{x}} = \frac{\lim_{x \rightarrow \infty} a + \lim_{x \rightarrow \infty} \frac{b}{x}}{\lim_{x \rightarrow \infty} c - \lim_{x \rightarrow \infty} \frac{d}{x}} = \frac{a}{c}$$