

# H.w 1

حل اول المسائل الاولى

$$1- f(x) = \frac{x^2 - 3x + 2}{x - 2}, x \neq 2; \text{ find}$$

$$\lim_{x \rightarrow 2} f(x)$$

Sol: -

$$\lim_{x \rightarrow 2} \left( \frac{x^2 - 3x + 2}{x - 2} \right) = \lim_{x \rightarrow 2} \frac{(x-2)(x-1)}{(x-2)}$$

$$= \lim_{x \rightarrow 2} (x-1) = 2-1 = 1$$

2) موجود الحل  
في الملزمه

H.W / 3

$$\lim_{t \rightarrow 0} \frac{\tan t \sec 2t}{3t}$$

$$\left[ \lim_{t \rightarrow 0} \frac{\tan t}{3t} \right] \cdot \left[ \lim_{t \rightarrow 0} \frac{\sec 2t}{3t} \right]$$

$$\left[ \frac{1}{3} \lim_{t \rightarrow 0} \frac{\tan t}{t} \right] \cdot \left[ \lim_{t \rightarrow 0} \frac{1}{3} \cdot \frac{\sec 2t}{t} \cdot \frac{2}{2} \right]$$

$$\left[ \frac{1}{3} \cdot 1 \right] \cdot \left[ \frac{2}{3} \lim_{t \rightarrow 0} \frac{\sec 2t}{2t} \right]$$

$$\frac{1}{3} \cdot \frac{2}{3} = \frac{2}{9} = \frac{2}{3} \cdot \frac{1}{3}$$

4)

$$\lim_{x \rightarrow \infty} \left[ \frac{11x + 2}{2x^3 - 1} \right] = x^3$$

$\frac{1}{\infty} = 0$   
 $\infty$  or  $\frac{\infty}{\infty}$   
zero

$$\lim_{x \rightarrow \infty} \frac{11 \frac{x}{x^3} + \frac{2}{x^3}}{2x^3 - \frac{1}{x^3}} \Rightarrow \lim_{x \rightarrow \infty} \frac{\frac{11}{x^2} + \frac{2}{x^3}}{2 - \frac{1}{x^3}}$$

$$= \frac{0 + 0}{2 - 0}$$

APICAL



$$5) \left[ \lim_{x \rightarrow \infty} \frac{2x^2 + 1}{3x^2 - 2x^2 + 5x - 2} \right] = x^2$$

$$\lim_{x \rightarrow \infty} \frac{\frac{2x^2}{x^2} + \frac{1}{x^2}}{\frac{3x^2}{x^2} - \frac{2x^2}{x^2} + \frac{5x}{x^2} - \frac{2}{x^2}}$$

$$\frac{2 + 0}{3 - 2 + 0 - 0} = \frac{2}{1}$$

~~Ergebnis~~  
 als  $\frac{2}{1}$  als Limit  
 Subtrahieren