

ES N 32 PAG 363

$$\lim_{x \rightarrow 3} \frac{x^2 - 10x + 21}{x - 3} = -4$$

$$x = \frac{5 \pm \sqrt{25 - 21}}{1} = \begin{matrix} 7 \\ 3 \end{matrix}$$

$$= \left[ \frac{9 - 30 + 21}{3 - 3} = \frac{0}{0} \right] \text{ F.I.}$$

$$= \lim_{x \rightarrow 3} \frac{\cancel{(x-3)}(x-7)}{\cancel{(x-3)}} = -4$$

N 33

$$\lim_{x \rightarrow 3^+} \frac{x^2 - 5x + 6}{(x-3)^2} = +\infty$$

$$\lim_{x \rightarrow 3^+} \frac{\cancel{(x-3)}(x-2)}{(x-3)^2} = +\infty$$

$$= \left[ \frac{9 - 15 + 6}{0^+} = \frac{0}{0} \right] \text{ F.I.}$$

N 47

$$\lim_{x \rightarrow 5} \frac{3 - \sqrt{4+x}}{-5 + 6x + 4x^2 - x^3} = \frac{1}{174}$$

$$= \left[ \frac{3 - \sqrt{9}}{-5 + 30 + 100 - 125} = \frac{0}{0} \right]$$

$$= \lim_{x \rightarrow 5} \frac{(3 - \sqrt{4+x})(3 + \sqrt{4+x})}{(-5 + 6x + 4x^2 - x^3)(3 + \sqrt{4+x})} = \lim_{x \rightarrow 5} \frac{9 - (4+x)}{(-5 + 6x + 4x^2 - x^3)(3 + \sqrt{4+x})}$$

$$= \lim_{x \rightarrow 5} \frac{x-5}{(x^3 + 4x^2 + 6x - 5)(3 + \sqrt{4+x})} =$$

$$= \lim_{x \rightarrow 5} \frac{1}{\left(x^2 + 9x + 51 + \frac{260}{x-5}\right)(3 + \sqrt{4+x})} =$$

$$\begin{array}{r|l} x^3 + 4x^2 + 6x - 5 & x-5 \\ \underline{x^3 - 5x^2} & \\ // 9x^2 + 6x & \\ \underline{9x^2 - 45x} & \\ // 51x - 5 & \\ \underline{51x - 255} & \\ // 260 & \end{array}$$

= 0 ?