

|                                                                                                                                                                                                                                                                                                                                                    |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| $x \begin{cases} x \rightarrow -1^+ \Rightarrow f(x) = 2 + d(0) \\ x \rightarrow -1^- \Rightarrow f(x) = 2 + d \end{cases} \quad 2 = 2 - d \Rightarrow d = 0$ $\left[ \frac{d}{2} \right] = \left[ \frac{0}{2} \right] = 0$                                                                                                                        | ۱ |
| $\sin \frac{\pi}{4} = \frac{1}{\sqrt{2}} \Rightarrow \sin \left( \frac{\pi}{4} \right)^- = \frac{1}{\sqrt{2}}^- \Rightarrow 2 \sin x = 1^-$ $\lim_{x \rightarrow \left( \frac{\pi}{4} \right)^-} [2 \sin x - 1] \Rightarrow [1^- - 1] = \boxed{-1}$                                                                                                | ۲ |
| $\lim_{x \rightarrow \frac{-1}{2}} [14x^3 - x] \rightarrow [14 \left( \frac{-1}{2} \right)^3 - \left( \frac{-1}{2} \right)] = \left[ \frac{-1}{2} \right] = -1$                                                                                                                                                                                    | ۳ |
| $x < \frac{-1}{2} \rightarrow x^2 > \frac{1}{4} \rightarrow \frac{1}{x^2} < 4 \quad \frac{3}{x^2} < 12 \quad \left[ \frac{3}{x^2} \right] = 11$ $\frac{10x - 10 + 11}{14x - (-1)} = \frac{10x + 1}{14x + 1} \xrightarrow{x \rightarrow \left( \frac{-1}{2} \right)^-} \frac{-\frac{5}{2}}{0^-} = -\infty \quad \left[ \frac{3}{x^2} \right] = -11$ | ۴ |
| $[x] = 1, \quad \frac{\sin^2 \pi x}{1 + \cos \pi x} = \frac{1 - \cos^2 \pi x}{1 + \cos \pi x} = \frac{(1 - \cos \pi x)(1 + \cos \pi x)}{1 + \cos \pi x} = +1$                                                                                                                                                                                      | ۵ |

$$\lim_{x \rightarrow -1} \frac{\sqrt{4x+3} - \sqrt{4x+5}}{1+\sqrt{x}} \rightarrow \frac{1-1}{1-1} \rightarrow \frac{0}{0} \Rightarrow \text{hop} \frac{2}{2\sqrt{4x+3}} - \frac{2}{2\sqrt{4x+5}} \Rightarrow \frac{2}{2\sqrt{x}} = \frac{2}{2\sqrt{-1}} = \frac{2}{-2} = -1$$

$$\lim_{x \rightarrow 1} \frac{4x - \sqrt{4x+5}}{4x - \sqrt{4x+1}} \rightarrow \frac{4-3}{4-3} \Rightarrow \text{hop} \frac{4 - \frac{4}{\sqrt{x}}}{4 - \frac{4}{\sqrt{4x+1}}} = \frac{-1/4}{0} = -\frac{4}{\Delta}$$

$$a + \sqrt{c} = 0 \Rightarrow a = -\sqrt{c} \Rightarrow \text{hop} = \frac{b}{2\sqrt{bx+c}} = \frac{1}{\epsilon} \Rightarrow x \rightarrow 0 \Rightarrow \frac{b}{x\sqrt{c}} = \frac{1}{\epsilon} \Rightarrow 2b = \sqrt{c} \Rightarrow a = -2b \Rightarrow \frac{ab}{c} = \frac{-2b \times b}{\epsilon b^2} = \frac{-1}{\epsilon}$$

$$\lim_{x \rightarrow -\pi} \frac{\epsilon + k \left[ \frac{x}{\pi} \right]}{\sin x} = +\infty \quad x \rightarrow -\pi^+ \rightarrow \frac{0}{0} \Rightarrow \frac{-k + \epsilon}{-k + \epsilon} \in \epsilon + k \left[ \frac{-\pi^+}{\pi} \right] \Rightarrow \frac{1}{\pi} (k < \epsilon) \Rightarrow \frac{1}{\pi} (k < \epsilon) - k > -\epsilon \Rightarrow [-k] = -\epsilon$$

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

$$b \text{ لول لول لول } = \frac{1}{4}$$