

12 5) $\lim_{x \rightarrow 4} \frac{\sqrt{x} - 2}{\sqrt{3x-8} - 2} = ?$
Lis 6.3

$$\frac{\sqrt{x} - 2}{\sqrt{3x-8} - 2} \cdot \frac{\sqrt{x} + 2}{\sqrt{x} + 2}$$

$$= \frac{x - 4}{(\sqrt{3x-8} - 2) \cdot (\sqrt{x} + 2)}$$

$$\leadsto \frac{(x-4) \cdot (\sqrt{3x-8} + 2)}{(3x-8-4) \cdot (\sqrt{x} + 2)}$$

$$\frac{x-4}{3x-12}$$

$$\frac{\sqrt{3x-8} + 2}{\sqrt{x} + 2}$$

$\sqrt{4} = 2$

$$\left[\frac{1}{3} \right] \frac{x-4}{x-4} \rightarrow 1$$

$$\sqrt{4} = 2$$

$$\frac{4}{4} = 1$$

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

$$x \cdot \text{Sen} (1/x)$$

↳

$$k = 2/\pi$$

$$t = 1/x$$

$$\frac{2}{\pi} \text{Sen} \frac{\pi}{2} = \frac{2}{\pi}$$

$$x = 1/t$$

↳ $x \cdot \text{Sen} (1/x)$

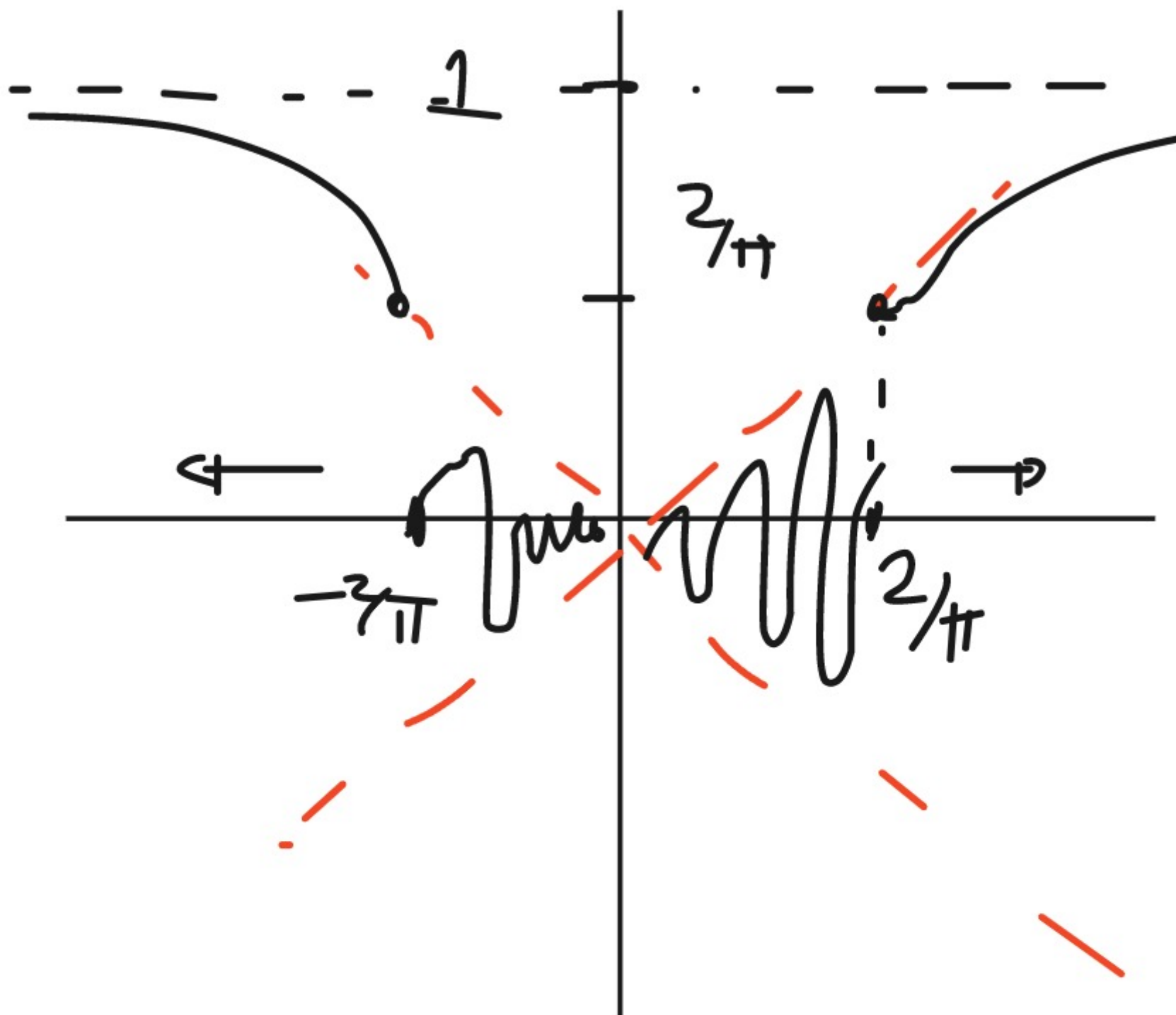
$$\boxed{\frac{\text{Sen}(t)}{t}}$$

$$x \rightarrow +\infty \quad z_1 \quad t \rightarrow 0^+$$

$$x \rightarrow -\infty \quad z_2 \quad t \rightarrow 0^-$$

$$\lim_{x \rightarrow +\infty} x \operatorname{Sen}(1/x)$$

$$\lim_{t \rightarrow 0^+} \frac{\operatorname{Sen}(t)}{t}$$



ET 7

5(a)

$$f(x) = \begin{cases} (x^4 + x^2) \cdot \cos(1/x) \\ 0 & \text{se } x = 0 \end{cases}$$

existe $f'(0)$?

$$\lim_{x \rightarrow 0} \frac{f(x) - f(0)}{x - 0}$$

$$= \lim_{x \rightarrow 0} \frac{(x^4 + x^2) \cdot \cos(1/x)}{x}$$

$$= \lim_{x \rightarrow 0} (x^3 + x) \cdot \cos(1/x)$$

$$= \lim_{x \rightarrow 0} (x^3 + x) \cdot \cos(1/x)$$

$$= 0$$

E→ 4.5, 6
ex 9) $x^3 - 5x + 3 = 0$



$$f(x)$$

$$f(0) = 3$$

$$f(1) = -1$$



$[0, \underline{1}]$

$$f(2) = \underline{1}$$

$[\underline{1}, 2]$



-5

$$f(-5) = -125$$

$$+ 25 + 3$$

$$= -97$$

$[-5, 0]$

\uparrow