

20/07/20

$$\text{A. } \lim_{x \rightarrow x_0} f(x) = -\infty, \quad \lim_{x \rightarrow x_0} \frac{2 - 6xf(x)}{f^2(x) + f(x) + 1} = 0$$

$$-1 \leq 6xf(x) \leq 1 \Leftrightarrow 1 \geq -6xf(x) \geq -1 \Leftrightarrow -1 \leq -6xf(x) \leq 1 \Leftrightarrow$$

$$1 \leq 2 - 6xf(x) \leq 3 \quad (1)$$

Tipe:  $\lim_{x \rightarrow x_0} (f^2(x) + f(x) + 1) = \lim_{u \rightarrow -\infty} (u^2 + u + 1) = \lim_{u \rightarrow -\infty} u^2 = +\infty$

Apa  $f^2(x) + f(x) + 1 > 0$  konnã go  $x_0$

$$(1) \Rightarrow \frac{1}{f^2(x) + f(x) + 1} \leq \frac{2 - 6xf(x)}{f^2(x) + f(x) + 1} \leq \frac{3}{f^2(x) + f(x) + 1}$$

$$\lim_{x \rightarrow x_0} \frac{1}{f^2(x) + f(x) + 1} = 0 = \lim_{x \rightarrow x_0} \frac{3}{f^2(x) + f(x) + 1}$$

Ani kempo jawab.

lim ... = 0

αGu.10/ (8) Αν  $f(x) < 0$  κοντά στο  $x_0$  τότε

$$\lim_{x \rightarrow x_0} \frac{G \circ f(x)}{B(x)} = -\infty$$

$$-\infty \cdot \frac{1}{0} =$$

$$\lim_{x \rightarrow x_0} (G \circ f(x)) = \lim_{u \rightarrow 0^-} G u = -\infty$$

Σημ  $|m \mu x| \leq |x|$ . Για  $x < 0$ ,  $x$  κοντά στο 0  $\rightarrow -m \mu x \leq -x \Rightarrow m \mu x \geq x$   
 Αφού  $f(x)$  κοντά στο 0 και  $f(x) < 0 \rightarrow m \mu f(x) \geq f(x) \rightarrow m \mu f(x) - f(x) > 0$

$$\lim_{x \rightarrow x_0} \frac{1}{m \mu f(x) - f(x)} = +\infty \quad \text{Αρα} \quad \lim_{x \rightarrow x_0} B(x) = -\infty$$

αGu.14  $\lim_{x \rightarrow x_0} \frac{f(x)}{g(x)} = +\infty$       $\lim_{x \rightarrow x_0} f(x) = \lambda \in \mathbb{R}$       $\lim_{x \rightarrow x_0} g(x) = 0$

Θέσω  $A(x) = \frac{f(x)}{g(x)}$