

Ag / 2159

$$f(x) = x^2 - 1$$

Πίνω εἰσω ἔσω

$$A_f = R$$

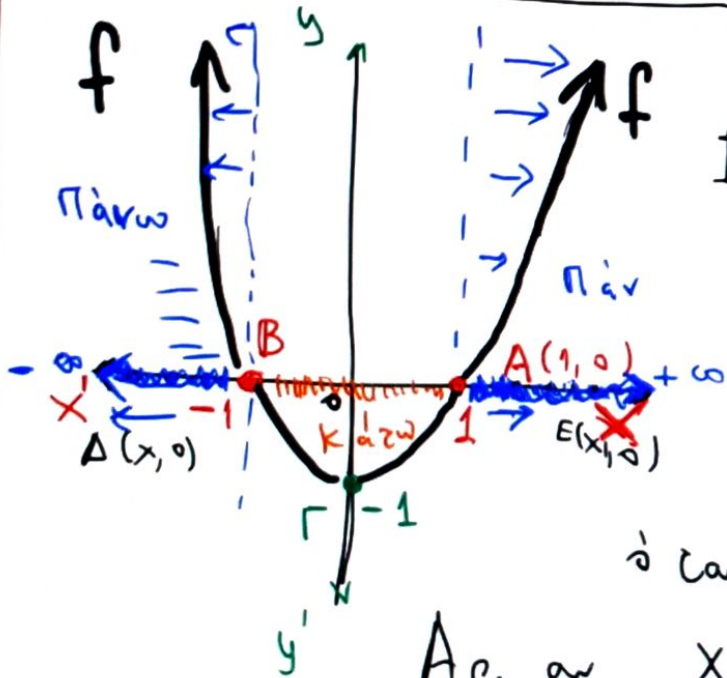
$$I) \xrightarrow{y=0} (f \cap x'x \Rightarrow f(x) = 0 \Leftrightarrow x^2 - 1 = 0 \Leftrightarrow x^2 = 1 \Leftrightarrow x = \pm \sqrt{1}$$

$$x = +1 \wedge x = -1$$

$$(f \cap y'y \Rightarrow \text{Υπολογίζω } z_0$$

$$f(0) = 0^2 - 1 = 0 - 1 = -1$$

$$A(1,0), B(-1,0)$$



$$II) \xrightarrow{y>0} x \in R : (f \cap \text{πάνω } x'x \Leftrightarrow \text{ευθεία } y=0 \text{ οριζόντια})$$

$$f(x) > 0$$

$$\Leftrightarrow x^2 - 1 > 0 \Leftrightarrow x^2 > 1 \Leftrightarrow$$

$$\sqrt{x^2} > \sqrt{1} \Leftrightarrow |x| > 1 \Rightarrow \boxed{x < -1 \vee x > 1}$$

$$\text{ὥστε } x \in (-\infty, -1) \cup (1, +\infty) \Rightarrow f(x) > 0 \Rightarrow (f \text{ πάνω από } x'x$$

$$A_f \approx x \in (-1, 1) \Rightarrow$$

$$f(x) < 0 \Rightarrow (f \text{ είναι κάτω από } x'x \text{ ἔσω})$$

$$\bullet f(x) < 0 \Leftrightarrow x^2 - 1 < 0 \Leftrightarrow x^2 < 1 \Leftrightarrow \sqrt{x^2} < \sqrt{1}$$

$$|x| < 1 \Leftrightarrow -1 < x < 1 \quad \text{Αν } x \in (-1, 1) \Leftrightarrow (f \text{ κάτω από } x'x$$

$$g(x) = x - 1$$

$$\frac{v^p}{-} \geq 1) (f \cap g \Leftrightarrow f(x) = g(x) \Leftrightarrow$$

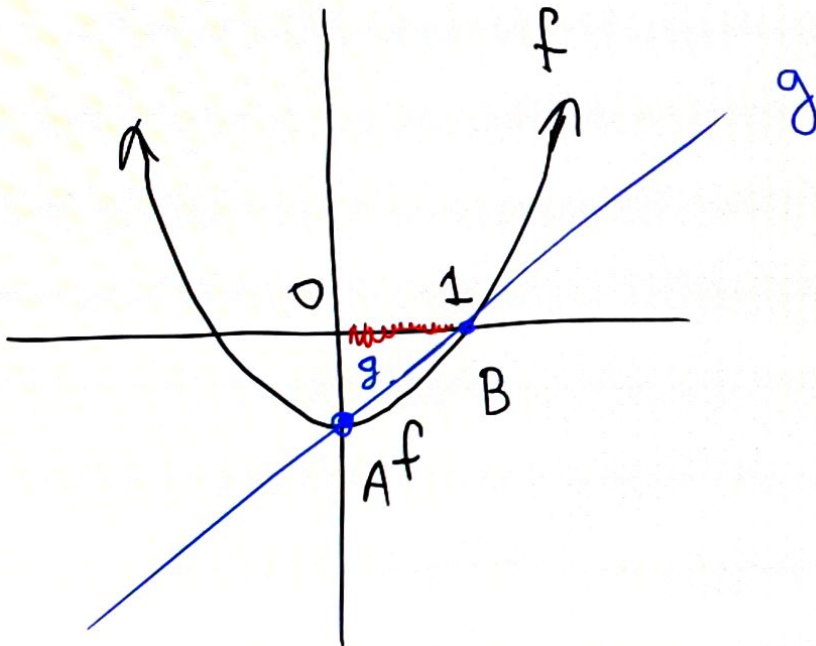
$$X^2 - 1 \approx X - 1 \quad (\S)$$

$$x^2 = x \iff$$

$$x^2 - x = 0 \quad (5)$$

$$x \cdot (x-1) = 0 \Leftrightarrow$$

$$|x \approx 0 \wedge x \approx 1|$$



$$g(0) = 0 - 1 = -1 \quad g(1) = 1 - 1 = 0$$

$A(0, -1)$

$B(1,0)$

$$D) \leadsto x \in \mathbb{R} : \underbrace{(f \text{ ist } \omega) \wedge (g \text{ ist } \omega)}_{f(x) < g(x) \Leftrightarrow} \quad x^2 - 1 < x - 1 \quad \Leftrightarrow$$

$$X^2 \subset X \text{ (G)}$$

$$x^2 - x < 0$$

x	$-\infty$	0	1	$+\infty$
$x^2 - x$	$+$	0	$-$	$+$

$$0 < x < 1$$

$$\Sigma nIT1 \quad A10 \quad \Sigma 158$$

2) $\forall \epsilon > 0 \exists x \in \mathbb{R} : (0 < |x| < \epsilon \wedge x' \neq x)$

$T_{\alpha\beta} = \frac{1}{2} (\delta_{\alpha\beta} + \epsilon_{\alpha\beta})$