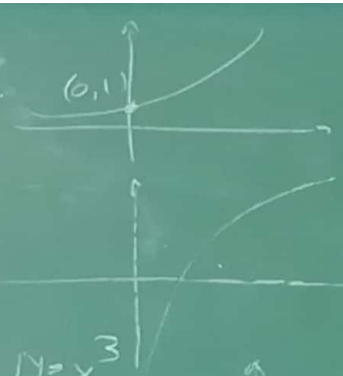
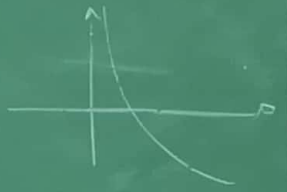
$f(x) = e^x$




$f(x) = \ln x$

$y = a^x, \quad 0 < a < 1$

$y = \log_a x, \quad 0 < a < 1$

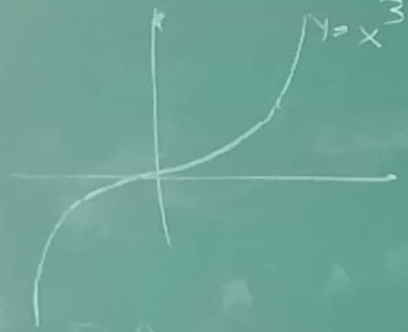


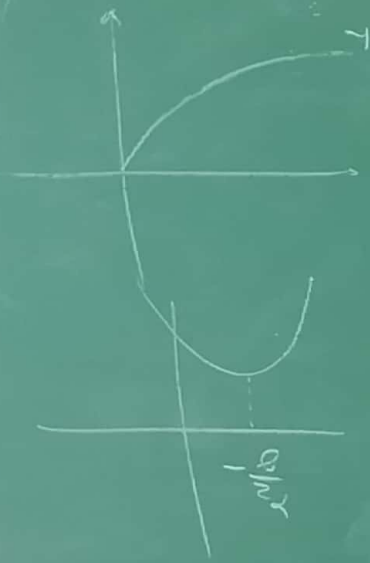
$f(x) = x^2 - 4x + 3$

$a = 1 > 0$ $\qquad x_0 = -\frac{\beta}{2a} = -\frac{-4}{2} = 2$

Θέση ελαχίστου $x_0 = 2$

Ελάχιστο $f(2) = 2^2 - 4 \cdot 2 + 3 = -1$



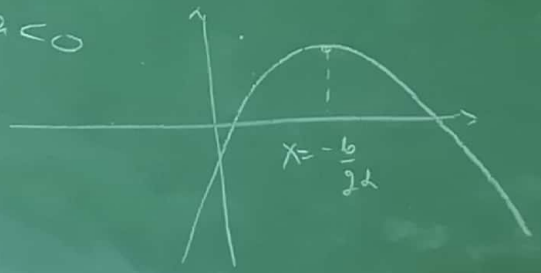



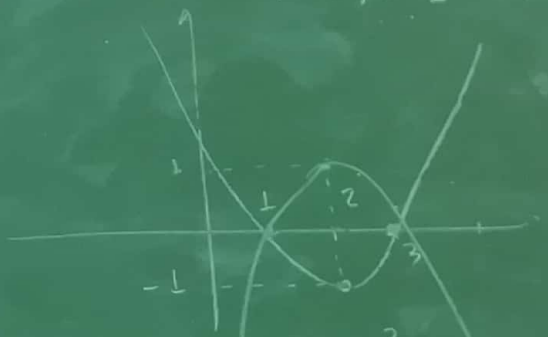

$f(x) = ax^2 + \beta x + \gamma$

$a > 0$

$f(x) = ax^2 + \beta x + \gamma$

$a < 0$




$f(x) = 0 \Leftrightarrow x^2 - 4x + 3 = 0$

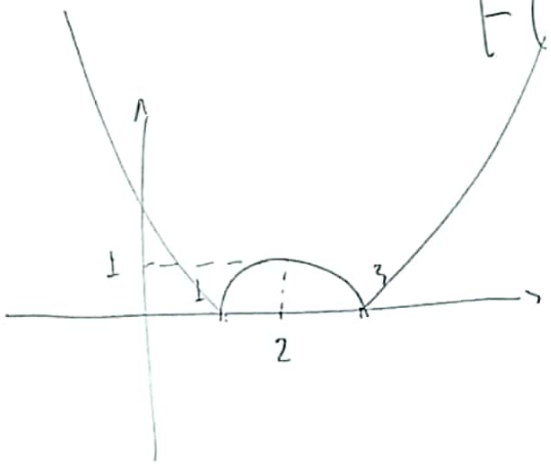
$x_{1,2} = \begin{cases} 3 \\ 1 \end{cases}$

$$g(x) = -(x^2 - 4x + 3)$$

Οι γραφικές παραστάσεις των συναρτήσεων $f(x)$, $-f(x)$ είναι συμμετρικές ως προς τον άξονα $x'x$

---

$$h(x) = |x^2 - 4x + 3| \begin{cases} x^2 - 4x + 3, & \text{αν } x^2 - 4x + 3 \geq 0 \\ -(x^2 - 4x + 3), & \text{αν } x^2 - 4x + 3 < 0 \end{cases}$$



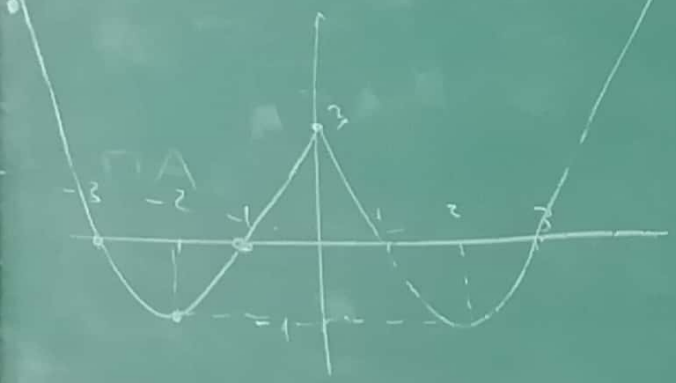
$w(x) = x^2 - 4|x| + 3$ $\quad w(6) = 3$

$w(-x) = (-x)^2 - 4|-x| + 3 =$

$= x^2 - 4|x| + 3 = w(x)$

$\Rightarrow$ η $w(x)$ άρτια

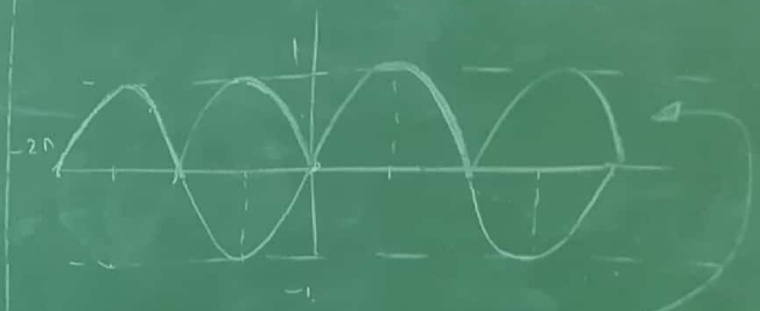
Για $x \geq 0$ $\quad w(x) = x^2 - 4x + 3$ $\quad |x| = -x$




Για $x < 0$ →

$w(x) = x^2 + 4x + 3$

$f(x) = \eta\mu x, \quad x \in [-2\pi, 2\pi]$




$g(x) = |\eta\mu x|$

$h(x) = \eta\mu|x|$ $\quad h(-x) = \eta\mu|-x| = \eta\mu|x| = h(x)$

$h(x)$ άρτια.