

Περιορισμοί : * $x+1 \geq 0 \Rightarrow x \geq -1$ και

$6x^2 + 1 \geq 0$ ισχύει για κάθε x και

$$2x + \sqrt{6x^2 + 1} \geq 0 \stackrel{\sqrt{6x^2 + 1} \geq 0}{\Rightarrow} x \geq 0$$

$$2x + \sqrt{6x^2 + 1} = (x+1)^2 \Rightarrow$$

$$\Rightarrow 2x + \sqrt{6x^2 + 1} = x^2 + 2x + 1 \Rightarrow$$

$$\Rightarrow \sqrt{6x^2 + 1} = x^2 + 1 \stackrel{x^2 + 1 \geq 0}{\Rightarrow} 6x^2 + 1 = x^4 + 2x^2 + 1 \Rightarrow$$

$$\Rightarrow x^4 - 4x^2 = 0 \Rightarrow x^2(x^2 - 4) = 0 \Rightarrow$$

$$x^2(x-2)(x+2) = 0 \Rightarrow$$

$$\Rightarrow x = 0 \text{ δεκτή} \quad \text{ή} \quad x = 2 \text{ δεκτή} \quad \text{ή} \quad x = -2 \text{ απορρίπτεται}$$

αφού πρέπει $x \geq 0$