

Β ΛΥΚΕΙΟΥ ΑΛΓΕΒΡΑ

21.1 1)

$$4x^4 = x^2 \Rightarrow 4x^4 - x^2 = 0 \Rightarrow x^2(4x^2 - 1) = 0 \Rightarrow x^2(2x - 1)(2x + 1) = 0 \Rightarrow$$

$$\Rightarrow x^2 = 0$$

$$\Rightarrow x = 0$$

$$\text{ή } 2x - 1 = 0 \Rightarrow$$

$$\Rightarrow 2x = 1 \Rightarrow x = \frac{1}{2}$$

$$\text{ή } 2x + 1 = 0 \Rightarrow$$

$$\Rightarrow 2x = -1 \Rightarrow x = -\frac{1}{2}$$

21.1 2)

$$x^4 - x^2 = 0 \Rightarrow x^2(x^2 - 1) = 0 \Rightarrow x^2(x - 1)(x + 1) = 0 \Rightarrow x = 0 \Rightarrow$$

$$\Rightarrow x = 0 \quad \text{ή} \quad x = 1 \quad \text{ή} \quad x = -1$$

21.1 3)

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

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

$$\Rightarrow x^2 = 0$$

$$\Rightarrow x = 0$$

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

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

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

21.1 4)

$$x^3 + x^2 = 2x \Rightarrow x^3 + x^2 - 2x = 0 \Rightarrow x(x^2 + x - 2) = 0 \Rightarrow$$

$$\Rightarrow x = 0 \quad \text{ή} \quad x^2 + x - 2 = 0 \stackrel{\Delta=9}{\Rightarrow} x = 1 \quad \text{ή} \quad x = -2$$

21.1 5)

$$x^4 = 5x^3 - 6x^2 \Rightarrow x^4 - 5x^3 + 6x^2 = 0 \Rightarrow x^2(x^2 - 5x + 6) = 0 \Rightarrow$$

$$\Rightarrow x = 0 \quad \text{ή} \quad x^2 - 5x + 6 = 0 \stackrel{\Delta=1}{\Rightarrow} x = 2 \quad \text{ή} \quad x = 3$$