

Β ΛΥΚΕΙΟΥ ΑΛΓΕΒΡΑ

20.9 1)

$$\begin{array}{r|l} \text{Σχήμα Horner :} & \begin{array}{rrrr} 2 & -2 & -3 & 3 \\ & -4 & 12 & -18 \\ \hline 2 & -6 & 9 & -15 \end{array} & \begin{array}{l} -2 \\ \text{Άρα : } \Pi(x) = 2x^2 - 6x + 9 \text{ και } v(x) = -15 \end{array} \end{array}$$

20.9 2)

$$\begin{array}{r|l} \text{Σχήμα Horner :} & \begin{array}{rrrr} 2 & -7 & 4 & -9 \\ & 6 & -3 & 3 \\ \hline 2 & -1 & 1 & -6 \end{array} & \begin{array}{l} 3 \\ \text{Άρα : } (2x^3 - 7x^2 + 4x - 9) = (2x^2 - x + 1)(x - 3) - 6 \end{array} \end{array}$$

20.9 3)

$$\begin{array}{r|l} \text{Σχήμα Horner :} & \begin{array}{rrrr} 3 & 8 & -2 & 5 \\ & -6 & -4 & 12 \\ \hline 3 & 2 & -6 & 17 \end{array} & \begin{array}{l} -2 \\ \text{Άρα : } 3x^3 + 8x^2 - 2x + 5 = (3x^2 + 2x - 6)(x + 2) + 17 \end{array} \end{array}$$

20.9 4)

$$\begin{array}{r|l} \text{Σχήμα Horner :} & \begin{array}{rrrr} 2 & -4 & -2 & 4 \\ & -2 & 6 & -4 \\ \hline 2 & -6 & 4 & 0 \end{array} & \begin{array}{l} -1 \\ \text{Άρα : } 2x^3 - 4x^2 - 2x + 4 = (2x^2 - 6x + 4)(x + 1) \end{array} \end{array}$$

20.9 5)

$$\begin{array}{r|l} \text{Σχήμα Horner :} & \begin{array}{rrrrr} 2 & 3 & -1 & -5 & 4 \\ & 2 & 5 & 4 & -1 \\ \hline 2 & 5 & 4 & -1 & 3 \end{array} & \begin{array}{l} 1 \\ \text{Άρα : } 2x^4 + 3x^3 - x^2 - 5x + 4 = (2x^3 + 5x^2 + 4x - 1)(x - 1) + 3 \end{array} \end{array}$$

20.9 6)

$$\begin{array}{r|l} \text{Σχήμα Horner :} & \begin{array}{rrrrr} 3 & -2 & -5 & -4 & -2 \\ & 6 & 8 & 6 & 4 \\ \hline 3 & 4 & 3 & 2 & 2 \end{array} & \begin{array}{l} 2 \\ \text{Άρα : } 3x^4 - 2x^3 - 5x^2 - 4x - 2 = (3x^3 + 4x^2 + 3x + 2)(x - 2) + 2 \end{array} \end{array}$$

20.9 7)

$$\begin{array}{r|l} \text{Σχήμα Horner :} & \begin{array}{rrrrr} -2 & 0 & 3 & 2 & 1 \\ & 4 & -8 & 10 & -24 \\ \hline -2 & 4 & -5 & 12 & -23 \end{array} & \begin{array}{l} -2 \\ \text{Άρα : } -2x^4 + 3x^2 + 2x + 1 = (-2x^3 + 4x^2 - 5x + 12) - 23 \end{array} \end{array}$$

20.9 8)

$$\begin{array}{r|l} \text{Σχήμα Horner :} & \begin{array}{rrrrr} 1 & 3 & 0 & 0 & -2 \\ & -4 & 4 & -16 & 64 \\ \hline 1 & -1 & 4 & -16 & 62 \end{array} & \begin{array}{l} -4 \\ \end{array} \end{array}$$

$$\text{Άρα : } x^4 + 3x^3 - 2 = (x^3 - x^2 + 4x - 16) + 62$$

20.9 9)

$$\text{Σχήμα Horner : } \begin{array}{r|rrrrr} 1 & 0 & 0 & 0 & 1 & -1 \\ & -1 & 1 & -1 & 1 & \\ \hline 1 & -1 & 1 & -1 & 2 & \end{array}$$

$$\text{Άρα : } x^4 + 1 = (x^3 - x^2 + x - 1)(x + 1) + 2$$

20.9 10)

$$\text{Σχήμα Horner : } \begin{array}{r|rrrr} 1 & -4\alpha & 3\alpha^2 & 5\alpha^3 & 2\alpha \\ & 2\alpha & -4\alpha^2 & -2\alpha^3 & \\ \hline 1 & -2\alpha & -\alpha^2 & 3\alpha^3 & \end{array}$$

$$\text{Άρα : } x^3 - 4\alpha x^2 + 3\alpha^2 x + 5\alpha^3 = (x^2 - 2\alpha x - \alpha^2) + 3\alpha^3$$

20.9 11)

$$\text{Σχήμα Horner : } \begin{array}{r|rrrr} 1 & \alpha & -\alpha^2 & -\alpha^3 & -\alpha \\ & -\alpha & 0 & \alpha^3 & \\ \hline 1 & 0 & -\alpha^2 & 0 & \end{array}$$

$$\text{Άρα : } x^3 + \alpha x^2 - \alpha^2 x - \alpha^3 = (x^2 - \alpha^2)(x - \alpha)$$

20.9 12)

$$\text{Σχήμα Horner : } \begin{array}{r|rrrrr} 3 & -8 & -6 & 16 & 1 & \sqrt{2} \\ & 3\sqrt{2} & -8\sqrt{2}+6 & -16 & 0 & \\ \hline 3 & -8+3\sqrt{2} & -8\sqrt{2} & 0 & 1 & \end{array}$$

$$\text{Άρα : } (3x^4 - 8x^3 - 6x^2 + 16x + 1) = (3x^3 + (3\sqrt{2} - 8)x^2 - 8\sqrt{2}x)(x - \sqrt{2}) + 1$$