

$$W_m(x) = \frac{x(x^2-4x+3)}{-2 \cdot (-3) \cdot (-5)} - 2 \frac{(x+2)(x^2-4x+3)}{2 \cdot (-1) \cdot (-3)} + \frac{2x(x^2-x-6)}{3 \cdot 1 \cdot (-2)} + 1 \frac{x(x^2+x-2)}{5 \cdot 3 \cdot 2}$$

$$W_m(x) = \frac{x^3-4x^2+3x}{-30} - \frac{2x^2+8x-12-4x^2+16x-12}{-6} + \frac{x^3-x^2-6x}{-3} + \frac{x^3+x^2-2x}{30}$$

$$W_m(x) = \frac{x^2-x}{6} - \frac{2x^3+4x^2+4x-12}{-6} + \frac{2x^3-2x^2-12x}{-6} = \frac{2x^2-8x-12}{-6} - \frac{x^2+x}{-6} =$$

$$= \frac{x^2+4x-12}{-6}$$

$$-\frac{2}{3}x^3 + \frac{1}{6}x^2 + \frac{1}{2}x - 2$$

Zadania na kolokwium z wykładu

1. Znaleźć pierwiastki wielomianu

$$p(x) = 4x^4 + 2x^2 + 3x - 1$$

$$p = [4 \ 0 \ 2 \ 3 \ -1];$$

$Z = \text{roots}(p)$  - miejsca zerowe

$$x = 0:0.01:5;$$

$$y = \text{polyval}(p, x);$$

$$\text{plot}(x, y)$$

2)

$$f(x) = \frac{x^2-2}{\cos(6x)+3}$$

$$\text{function } [y] = \text{funkcja}(x)$$

$$y = (x.^2 - 2) ./ (\cos(6*x) + 3);$$

→ funkcja.m

$$fzero('funkcja', [1, 2]);$$

$$x = -3:0.01:3;$$

$$y = \text{funkcja}(x);$$

$$\text{plot}(x, y)$$



$$\begin{cases} 3a - 2b + 5c = 10 \\ -b + 2c = 5 \\ a + b - c = 4 \end{cases}$$

$$A = \begin{bmatrix} 3 & -2 & 5 \\ 0 & -1 & 2 \\ 1 & 1 & -1 \end{bmatrix};$$

$$b = \begin{bmatrix} 10 \\ 5 \\ 4 \end{bmatrix}$$

$$x = A \backslash b \Rightarrow (A^{-1} * b)$$

$$A^{-1} = \text{inv}(A) = A^{-1} \cdot I$$

$$d = \det(A)$$

x	0	1	2	3	3.5	4	5	6
y	-2	3	4	1	8	9	15	30

$$x = [0, 1, 2, 3, 3.5, 4, 5, 6]$$

$$y = [-2, 3, 4, 1, 8, 9, 15, 30]$$

$$p = \text{polyfit}(x, y, 4);$$

$$xx = 0: 0.01: 6;$$

$$yy = \text{polyval}(p, xx);$$

$$\text{plot}(xx, yy; x, y, '*')$$

$$p = \text{polyfit}(x, y, 3)$$

$$c = \text{quad}('funktio', 2, 3)$$