

## Solution of nonlinear equations and systems.

**The objectives of the task:** Strengthen the skills of finding the roots of the polynomials.

**Task Requirements:** Find the roots of polynomials.

### Instructions for performing:

1. Find roots of polynomials with help graphs. - 1 point
2. Find roots of polynomials with used command **fsolve**. - 1.5 points
3. Available Comments - 0.5 points

Maximum evaluation are **3 points**

Variants of tasks.

1.  $1,1x^4 - x - 0,9 = 0$   
 $x^3 + x - 4 = 0$

2.  $2x^4 - x - 1,5 = 0$   
 $3x^3 - 5x^2 + 9x - 10 = 0$

3.  $2x^4 - 9,25x^2 - 63x + 5 = 0$   
 $3x^3 - 21x + 2 = 0$

4.  $0,9x^4 + 4,2x^3 - 8,5x^2 - 13 = 0$   
 $5x^3 + 13x - 11 = 0$

5.  $3x^4 + 4x^3 - 12x^2 - 5 = 0$   
 $x^3 + 2x^2 + 2 = 0$

6.  $3,2x^4 + 7,75x^3 + 6,3x^2 - 10,5 = 0$   
 $2x^3 + 0,48x^2 + 1,6x - 2,6 = 0$

7.  $2x^4 - 3x^2 - 5 = 0$   
 $2x^3 - 0,52x^2 + 5,4x - 7,4 = 0$

8.  $1,05x^4 - 17x^2 + 6 = 0$   
 $2x^3 - 0,35x^2 + 0,85x + 1 = 0$

9.  $3,25x^4 + 7,67x^3 + 5x^2 - 11 = 0$   
 $2x^3 + 5x^2 + 11x + 7 = 0$

10.  $2,2x^4 - 1,2x^2 - 11 = 0$   
 $3x^3 - 0,42x^2 + 0,95x - 2 = 0$

11.  $-x^4 - 18x^2 + 6 = 0$   
 $2x^3 - 0,08x^2 + 0,94x + 1,3 = 0$

12.  $-1,21x^4 + x^3 + 2x^2 - 3x - 5 = 0$   
 $3x^3 - 13x^2 + 16x - 15 = 0$

13.  $0,89x^4 + 3,67x^3 - 7,92x^2 - 13 = 0$   
 $2x^3 - 0,35x^2 + 0,47x - 1,43 = 0$

14.  $6x^4 + 8x^3 - 23x^2 + 2,1 = 0$   
 $5x^3 + 20x^2 + 5x + 8 = 0$

15.  $2x^4 - 2x^3 - 4x^2 + 6x - 7 = 0$   
 $1,9x^3 + 7x - 11 = 0$

You need to create a script file with graphic solution and enter few commands in the command window and get the numerical solution. Make a scan command window with the resulting solution. Send me the script file and the scan of command window with the solution

**Criteria for evaluation:** Available Comments, no mistakes.