

1. Using fixed-point iteration to solve the equation. Start with p_0 and compute p_1, p_2, p_3, p_4 . Find the error E and relative error R. Write a program in matlab (python) for the numerical solution of the equation by fixed-point method. Produce a graph of the function $g(x)$ and the line $y = x$. (The variant number corresponds to the number in the attendance list).
2. Produce a graph of the function $f(x)$ and find an interval $[a, b]$ so that $f(a)$ and $f(b)$ have opposite signs. Use bisection method to find the root of the equation. Write a program in matlab (python) for the numerical solution of the equation by bisection method.

1. $x^3 + 2x + 2 = 0$

2. $x^3 - 2x + 2 = 0$

3. $x^3 + 3x - 1 = 0$

4. $x^3 + x - 3 = 0$

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

6. $(x+1)^2 = \frac{1}{x}$

7. $x = (x+1)^3$

8. $x^3 + 4x - 4 = 0$

9. $x^3 + 6x - 1 = 0$

10. $x^3 + 12x - 12 = 0$

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

12. $x^3 + 0,5x - 1 = 0$

13. $x^3 + 2x - 4 = 0$

14. $x^3 + 0,4x + 2 = 0$

15. $x^3 + 9x - 11 = 0$

16. $x^3 + 6x + 3 = 0$

17. $x^3 + 5x - 1 = 0$

18. $x^3 + 9x - 3 = 0$

19. $x^3 + 10x - 5 = 0$

20. $x^3 + 13x - 13 = 0$

21. $x^3 + 7x - 7 = 0$

22. $x^3 + 4x - 2 = 0$

23. $x^3 + 5x - 4 = 0$

24. $x^3 + 8x - 6 = 0$

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

26. $x^3 + 2,5x - 5 = 0$

27. $x^3 + 5,5x - 2 = 0$

28. $x^3 + 7x - 3 = 0$

29. $x^3 + 8x - 5 = 0$

30. $x^3 + 15x - 10 = 0$

31. $\ln x - \frac{1}{x} = 0$

32. $\cos x + 2x - 1,5 = 0$

33. $\ln x - \sin x = 0$

34. $\ln x - \cos x = 0$

35. $\cos x - x = 0$

36. $\sin x + x - 1 = 0$

37. $\ln x - \frac{x}{2} - \frac{m}{2} = 0$

38. $x^3 - 5x^2 + 2x + 8 = 0$

39. $\sin x - \sqrt{1-x^2} = 0, 0 \leq x \leq 1$

40. $x^3 - 2x^2 - 5x + 6 = 0$