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Lab Assignment-1
CSE 4746 Numerical Methods Lab

1. Write a program to count number of significant digits in a given number.

2. Write a program to round off a number with n significant figures using banker's rule.

3. Write a program to evaluate a polynomial $f(x) = x^3 - 2x^2 + 5x + 10$ by using Horner's rule $x = 5$.

4. Write a program to find the root of the equation $x^3 - 9x + 1 = 0$, correct to 3 decimal places, by using the bisection method.

5. Write a program to find all the roots of the equation $x^3 - 6x + 4 = 0$, correct to 3 decimal places. [Use bisection method].

6. Write a program to find the root of the equation $x^3 - 6x + 4 = 0$, correct to 3 decimal places, by using Newton-Raphson method.

7. Write a program to find the root of the equation $x^3 - x + 2 = 0$, correct to 3 decimal places, by using false position method.

8. Write a program to find the root of the equation $x^3 - 5x^2 - 29 = 0$, correct to 3 decimal places, by using secant method.

9. Write a program to find the *quotient polynomial* q(x) such that p(x) = (x - 2) q(x) where the polynomial $p(x) = x^3 - 5x^2 + 10x - 8 = 0$ has a root at x = 2.

10. Write a program to find all the roots of the equation $x^3 - 6x + 4 = 0$, correct to 3 decimal places. [Use Newton-Raphson method with deflation].