Tutorial 7.2

Assignment 6

Lei Wang

lei.wang2@ucalgary.ca

UNIVERSITY OF CALGARY

Newton's method

```
#include<stdio.h>

float dy(float x,int n)    // dy function
{
        return(x*x*x-n);
}
float d(float x)           // dy/dx funtion
{
        return 3*x*x;
}
void main()
{
        float x, e=1.0e-10, input;

        printf("\n Newton Raphson's Method : To find Cube Root");
        printf("\n Enter Number whose Cube root to be found :- \n");
        scanf("%f", &input);

        x = input/3;                                    // initialize x = input/3.0
        x = x - ((dy(x, input))/d(x));     // calculate the difference between dy and the input value

        while(fabs(dy(x, input)) > input*e)
        {
                x = (x) - ((dy(x, input))/d(x));          //compute the new trial value
                printf("\n Square root of %13.10f is %13.10f \n", input, x);
        }
}
```

Instructions

- fabs
  - fabs dn, dm → dn = abs(dm)
- fcmp
  - fcmp dn, dm

Good luck with the final !