::::::::::::::
ex1.cc
::::::::::::::

```
#include<iostream>
using namespace std;

int factorial (int value)
{
        int i=1;
        int fact=1;

        while(i<value)
        {
                i++;
                fact=fact*i;
        }
        return(fact);
}

main()
{
        int max, a;

        cout << "Enter a non-negative integer less than 20 ";
        cin >> max;

        a=factorial(max);
        cout << max << " factorial is equal to " << a << endl;

        if(max<19)
        {
                max=max+1;
                a=factorial(max);
                cout << max << " factorial is equal to " << a << endl;
        }
}
```

::::::::::::::
ex3.cc
::::::::::::::

```
#include<iostream>
using namespace std;

// Finds the 2 roots of a polynomial.  "which" should be
// only 0 or 1.  Different values of which give you the
// different roots.  Doesn't work if imaginary roots.
double qroot (double a, double b, double c, int which)
{
        double inside, top, bottom;

        inside=b*b - 4*a*c;
        if(which==0)
                top=-b + sqrt(inside);
        else
                top=-b - sqrt(inside);
        bottom=2*a;

        return(top/bottom);
}
```

```
main()
{
        double n2coef, n1coef, n0coef;
        double root1, root2;

        cout << "Enter the n squared coefficient ";
        cin >> n2coef;
        cout << "Enter the n coefficient ";
        cin >> n1coef;
        cout << "Enter the constant coefficient ";
        cin >> n0coef;

        root1=qroot(n2coef,n1coef,n0coef,0);
        root2=qroot(n2coef,n1coef,n0coef,1);

        cout << endl << "The roots are " << root1 << " and " << root2 << endl;
}

::::::::::::::
ex4.cc
::::::::::::::
#include<iostream>
using namespace std;


// Very silly program that prompts the user to enter a set of numbers.
// The user then enters one more number and the program tells the user
// which numbers from the original set are larger than his final number.
main()
{
        const int NUM=5;   // number of values user must enter
        int list[NUM];
        int i=0;
        int ans;           // number user enters.
        int any=0;         // set to 1 if any number is greater.

        cout << "You will be prompted to enter " << NUM << " numbers" << endl;
        while(i<NUM)
        {
                cout << "Enter a number ";
                cin >> list[i];
                i=i+1;
        }
        cout << "Now pick a number ";
        cin >> ans;
        i=0;
        cout << endl;
        while(i<NUM)
        {
                if(ans<list[i])
                {
                        cout << "Your number " << ans << " is less than " << list[i];
                        cout << " from your list" << endl;
                        any=1;
                }
                i=i+1;

        }
        if(any==0)
                cout << "Your number was greater than all numbers in the list" << endl;
        cout << endl << "Bye!" << endl << endl;

}
```