Question 1: Write a program that reads a number in feet, converts it to meters and displays the result. One foot is 0.305 meter.

Program code

#include <iostream>

using namespace std;

int main()

{

double m;

cout <<" Enter a value for feet: ";

cin >>m;

cout <<m<<" feet is "<<m\*0.305<<" meters"<<endl;

system("pause");

return 0;

}

**Program analysis**:

This program input a float .

Then use a statement to change the feet into meter

Program result

Question 2:

Given an airplane’s acceleration a and take-off speed v, you can compute the minimum runway length needed for an airplane to take off using the following the formula:

    length = (v\*v)/(2\*a)

Write the program that prompts the user to enter v in meters/second and acceleration a in meters/second squared, and displays the minimum runway length.

Program code

#include <iostream>

using namespace std;

int main()

{

double a,v;

cout <<"Enter speed and acceleration: "<<endl;

cin >>v>>a;

cout <<"The minimum runway length for this airplane is "<<(v\*v)/(2\*a)<<endl;

system("pause");

return 0;

}

**Program analysis**:

This program input 2 floats .

Then use the formula to change the a and v into length

Program result

Question 3:

Write the program that reads in investment amount, annual interest rate, and the number of years, and displays the future investment value using the following formula:

    futureInvestmentValue=

investmentAmount\*(1+monthlyInterestRate)numberOfYears\*12

Program code

#include <math.h>

#include <iostream>

#include<stdio.h>

using namespace std;

int main()

{

double a,r;int n,i;

double x;

double sum=1;

cout <<"Enter investment amount:";

cin >>a;

cout <<"Enter annual interest rate in percentage:";

cin >>r;

cout <<"Enter number of years: ";

cin >>n;

r=r/1200;

x = a \* pow(1.0 + r,n\*12);

cout <<"Accumulated value is $"<<x;

system("pause");

return 0;

}

**Program analysis**:

In this program, we need to pay attention to 2palces

The first is the result calculated by the monthly Interest Rate and the annual Interest Rate is different

The second is that we need to use a function power to calculated the power of a number.

Program result