Name your program hw2.cpp. Program must be able to compile or you will get at most 1 out of 2 points for the assignment.

Part A:

The following exercise is taken from https://www.engage-csedu.org/find-resources/program-2-formatted-output-decisions (http://faculty.cs.niu.edu/~byrnes/csci240/pgms/fall2013/240pgm2.htm) with slight modification.

Due: Thursday March 1, 2018 by 11:59 PM

For this assignment, write a program that will act as a wage calculator for a single user. The program should prompt the user to enter the number of hours that they worked and their hourly wage. Those values will then be used to calculate:

- Gross Pay
- Amount of Deductions
- Net Pay

The **Gross Pay** is based upon the number of hours that were worked. If the user worked 40 hours or less, then:

Gross Pay = hours worked * hourly wage

If the user worked more than 40 hours, then:

Gross Pay = 40 * hourly wage + (hours worked - 40) * hourly wage * 1.5

The **Amount of Deductions** is based upon the gross pay. If the user earned less than $500, the deductions are 2% of the gross pay. If the user earned between $500 and $1000, inclusive, the deductions are 5% of the gross pay. If the user earned more than $1000.00, the deductions are 8% of the gross pay.

The **Net Pay** is based upon the gross pay and the deductions.

Net Pay = Gross Pay - Amount of Deductions

After all of the values have been calculated, display a simple table that contains: the number of hours worked, hourly wage, gross pay, amount of deductions, and net pay.

The number of hours worked should be an **integer** value. The dollar amounts should all be **double** values. Use meaningful variable names.
Validate the inputs as follow:

i. If a user enters a negative number for worked hour, print out the following messages and **terminate** the program.

   You have entered a negative number for worked hour. Terminating the program.

ii. If a user enters a negative number for hourly wage, use a **while** loop and print out the following message until a correct value is entered.

   Your hourly wage is less than 0. Please try again:

Make sure to test your program with values that you have calculated.

## Output

A few runs of the program should produce the following results.

### Run 1

How many hours did you work? 30
How much do you make per hour? 12

Wage Calculator
Hours Worked 30
Hourly Wage 12.00
--------------------------------
Gross Pay 360.00
Deductions 7.20
--------------------------------
Net Pay 352.80

### Run 2

How many hours did you work? 32
How much do you make per hour? 16.5

Wage Calculator
Hours Worked 32
Hourly Wage 16.50
--------------------------------
Gross Pay 528.00
Deductions 26.40
--------------------------------
Net Pay 501.60
Run 3
How many hours did you work? 40
How much do you make per hour? 27

Wage Calculator
Hours Worked 40
Hourly Wage 27.00
--------------------------------
Gross Pay 1080.00
Deductions 86.40
--------------------------------
Net Pay 993.60

Run 4
How many hours did you work? 47
How much do you make per hour? 15

Wage Calculator
Hours Worked 47
Hourly Wage 15.00
--------------------------------
Gross Pay 757.50
Deductions 37.88
--------------------------------
Net Pay 719.62

Run 5
How many hours did you work? -1
You have entered a negative number for worked hour.
Terminating the program.

Run 6
How many hours did you work? 15
How much do you make per hour? -1
Your hourly wage is less than 0. Please try again: 13.25

Wage Calculator
Hours Worked 15
Hourly Wage 13.25
--------------------------------
Gross Pay 198.75
Deductions 3.98
--------------------------------
Net Pay 194.78
Part B:

Include the “Change in bills” program from part 4 exercise in lab06.pdf.