CS21 Lab – Chapter 5, Part I

1. (*change.py*) Write a function that takes in an amount of change and prints how many of each coin to use to make that amount of change. Write a main function that asks the user for input, validates that input, and then calls our function to calculate and show the results. Since we are just working with coins, the user should not provide more than $0.99 to the program

   Run 1:

```
How much change do you need in cents? -5
The change must be between 1 cent and 99 cents!
How much change do you need in cents? 152
The change must be between 1 cent and 99 cents!
How much change do you need in cents? 74
2 Quarters
2 Dimes
0 Nickels
4 Pennies
>>>
```

   Run 2:

```
How much change do you need in cents? 94
3 Quarters
1 Dimes
1 Nickels
4 Pennies
>>>
```

2. (*bmi.py*) The Body Mass Index (BMI) is often used to determine whether a person is overweight or underweight for his or her height. A person's BMI is calculated with the following formula:

$$BMI = weight\ x\ \frac{703}{height^2}$$

where weight is measured in pounds and height is measured in inches.

Write a function called `display_BMI` that accepts weight and height as arguments and calculates the resulting BMI. Based on this result, and using the table below, issue a message containing the BMI and an appropriate message regarding weight status.

In `main()` ask the user to supply height and weight. Be sure to validate inputs. The given chart is only valid for individuals at least 20 years old; choose an appropriate minimum and maximum height and weight. No magic numbers!

BMI	Weight Status
Below 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight
30.0 and Above	Obese

Source: Centers for Disease Control and Prevention
http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/

Sample Runs of program:

Run #1:

```
Enter weight: 150
Enter height: 65
BMI = 25.0 normal
```

Run #2

```
Enter weight: 70
Invalid weight try again!
Enter weight: 80
Enter height: 40
Invalid height try again!
Enter height: 60
BMI = 15.6 underweight
```