Loops

# Instructions

Complete the problems below by having MATLAB compute them sequentially from a .m file. Complete the assignment by posting a single .m file named appropriately to the D2L folder.

Now that you have learned how to use sections. Each problem should be in one .m file but separated by sections. Remember, if you want to use clc;clear;close all; statements for yourself that is fine, but YOU MUST COMMENT IT OUT before submitting.

# Problems

1. Body Mass Index (BMI) is a measure of obesity. In standard units, it is calculated by the formula

Where *W* is weight in pounds, and *H* is height in inches.

Write a program that calculates the *BMI* of a person. The program should ask the person to enter his or her weight (lb) and height (in). The program displays the result to the user as a sentence that reads: “Your BMI value is XXX, which classifies you as SSSS” where XXX is BMI rounded to the nearest tenth and SSSS corresponds to the classification.

1. The following are formulas for calculating the training heart rate (THR) for men and women:

For men (Karvonen formula):

For women:

Where *AGE* is the person’s age, *RHR* is the resting heart rate, and *INTEN* the fitness level (0.55 for low, 0.65 for medium, 0.8 for high fitness). Write a program that determines the *THR.* The program should ask the user to enter their gender (1 for male, 2 for female), age (number in years), resting heart rate (number in beats per minute), and fitness level (1 for low, 2 for medium, 3 for high). The program should be able to warn the user when they have entered in an invalid value and ask them to enter a valid value to proceed. Once the user has input valid values, the program displays the training heart rate.