We need your ID information on both this test paper and the Scantron form.

USE A PENCIL on the Scantron form. If you do not have a pencil, ask the Professor or TAs.
At the top of your Scantron form, please fill in your name.
Write your ID number in the box on the right, and FILL IN THE BUBBLES.
For Test Form, in the box on the right, FILL IN THE BUBBLE for A. There are multiple versions of this test.

Then turn this test over and also enter your information ON THE BACK of that sheet.
Multiple choice: Fill in the bubble corresponding to the best answer on the Scantron form.
Choose only ONE answer for each of the multiple choice questions. None of the questions is intended to have more than one right answer. If there seem to be more than one correct answer, pick the best one. If two or more answers are filled in, you will get no credit. There is no penalty for wrong answers, so it is better to guess than to leave the problem blank. Always fill in one bubble.
You can erase on the Scantron. Be sure to erase completely and make sure there are no stray pencil marks on the Scantron.

1. The following program is supposed to convert the value of U.S. money into Indian Rupees. At the current rate, one dollar equals 46.23 Rupees. The program:

```python
UScurrency = input("Enter a number, such as 1.52, indicating 1.52 dollars")
ruppes = UScurrency * 46.23
print ("US currency", UScurrency, "dollars, equals", rupees, "Rupees")
```

a) will give the result it is supposed to if the user inputs 1.52
b) will give the result 46 if the user inputs 1
c) will generate an error message for anything the user inputs

2. The program:

```python
hourlypay = 20.0
hours = 40
totalpay = hourlypay * hours
print (totalpay)
```

a) prints 800.0
b) prints 800
c) generates an error message

3. The program:

```python
income = 7500.00
modified_income = (5.0 * income) - 250.0
tax_income = modified_income/10.0
print (modified_income)
```
4. The following program:

```python
string1 = "Hello"
string2 = "World"
print (string2 + string1)
```

a) prints Hello World  
b) prints WorldHello  
c) prints HelloWorld  
c) generates an error message.

5. The program:

```python
num = 5//2
num = float(num)
print (num)
```

a) prints 2.5  
b) prints 2.0  
c) generates an error message  
d) prints 2

6. This program:

```python
x = input("Enter a or b: ")
if x == "b":
    points = 1
else:
    points = 0
elif x == "a":
    points = 2
print ("Points:", points)
```

a) always prints out the value of the variable points.  
b) might print out the value of the variable points, depending on what the user types.  
c) generates an error message.

7. The following program:

```python
import random
x = random.randrange(4)
if ((x > 2) and not (x > 3)):
    print (x)
```

a) will never print anything  
b) will print 3 if x is 3  
c) will print 4 if x is 4
8. The following two programs:
   if not ((x > 2) and (x < 5)):
       print (x)
   else:
       print (x+1)

   and

   if (x <= 2) or (x >= 5):
       print (x)
   else:
       print (x+1)

   a) will always print the same number
   b) will sometimes print the same number, but not always
   c) will never print the same number

9. When x is 3, the following program:

   if x > 2:
       print (x)
       if x > 4:
           print (x)
       else:
           print (x+2)
   else:
       print (x+2)

   a) will print
   5
   b) will print
   3
   3
   c) will print
   3
   5
   d) will print
   3

10. The following program

    sentry = 1
    while sentry:
        reply = input("Enter H or T: ")
        if (reply == "H") or (reply == "T"):
            sentry = sentry - 1
            print ("Thank you."
        print ("Thank you."

    a) will print "Thank you" once.
    b) will never print "Thank you".
    c) will print "Thank you" twice
    d) can print "Thank you" more than twice depending on what the user inputs.
11. This program:

```python
size = 12
factor = -3
while size > 0:
    print(size)
    size += factor
```

a) prints two lines  
b) prints three lines  
c) prints four lines  
d) has an infinite loop

Programming problem.

The following are formulas, based on age and gender, for the maximum heart rate that people should allow themselves when exercising. The maximum heart rate is \(209 - (0.7 \times \text{age})\) for females, and \(214 - (0.8 \times \text{age})\) for males, where age is in years. The “extended heart rate”, the advised rate during extended periods of exercise, is 80% of the maximum for females, and 85% of the maximum for males.

Write a program that asks the user whether they want heart rate information for males or for females. Then based on the user answer, the program should use the appropriate formulas to compute and print out the maximum heart rate and the extended heart rate for that gender, for all ages starting with 15, incrementing by 5 and ending at 80, including 15 and 80. The program should check if the user answers M or F to the gender question, and should print “Not appropriate reply” if they enter something other than M or F. An example of the execution of the program is:

```
Do you want information for males or females? (M/F) F
```

```
age, max, extended
15 198.5 158.8
20 195.0 156.0
25 191.5 153.2
30 188.0 150.4
35 184.5 147.6
40 181.0 144.8
45 177.5 142.0
50 174.0 139.2
55 170.5 136.4
60 167.0 133.6
65 163.5 130.8
70 160.0 128.0
75 156.5 125.2
80 153.0 122.4
```

Notice that there is a blank line between the question and the start of the table, and that the first line of the table has the heading “age, max, extended”. Your program should do that as well. This program must show you understand the while loop and the if statement. Comments are required, and may help us figure out what you are trying to do and so raise your score.