Team: _____

Team Members:

_____   _____

_____   _____

_____   _____

1 Interpreting Programs

What do the following programs print?

A.

```
# assume the user enters Bob
name = input("What's your name? ")

if len(name) < 5:
    print("My you have a short name")
    print(name, "is a good name though!")
print("Thanks for running the program", name)
```

B.

```
# assume the user enters Montgomery
name = input("What's your name? ")

if len(name) < 5:
    print("My you have a short name")
    print(name, "is a good name though!")
print("Thanks for running the program", name)
```

C.

```
x = 7
y = 2

if y != 2:
    print("Apple")
elif x == 7:
    print("Banana")
else:
    print("Pear")
```

D.

```
temp = 72

if temp < 20:
    print("Super cold")
elif temp < 60:
    print("Cold")
elif temp < 80:
    print("Nice")
elif temp < 90:
    print("Warm")
else:
    print("Hot")
```

E.

```
temp = 72

if temp < 20:
    print("Super cold")
if temp < 60:
    print("Cold")
if temp < 80:
    print("Nice")
if temp < 90:
    print("Warm")
else:
    print("Hot")
```

F.

```
age = int(input("How old are you? "))
height = int(input("How tall are you? "))

if age > 10 and height > 48:
    print("You can ride the roller coaster")
else:
    print("Sorry you can't ride")
```

If the user enters:
   a. 34 and 72
   b. 9 and 40
   c. 12 and 48
   d. 8 and 50

G.

```
# this is the same program, except the and is an or
age = int(input("How old are you? "))
height = int(input("How tall are you? "))

if age > 10 or height > 48:
    print("You can ride the roller coaster")
else:
    print("Sorry you can't ride")
```

If the user enters:
   a. 34 and 72
   b. 9 and 40
   c. 12 and 48
   d. 8 and 50

2 Writing Programs

A. Program F in the section above checks if the user meets the height and age requirement of a roller coaster. If they can ride it tells them so. If they can't it tells them they can't ride, but not why. Write a version of it that tells them either they can ride, they are not old enough, or they are not tall enough.

B. Write a program to tell a student what they are classified as at UMW. Here, people with less than 30 credits are freshman, those with less between 30 and 59 credits are sophomores, those with between 60 and 89 credits are juniors, and those with 90 or more credits are seniors. Ask the user how many credits they have and print what class they belong to.

C. You are helping organize a large event which people need to check into. To help make checking in faster, you are dividing people by last name. Those with a last name beginning with a letter A–F check in at line 1. Those with a first letter from G–L go to line 2. Those with M–R go to line 3, and those with a first letter from S–Z go to line 4. Write a program which will ask the user for their last name and tell them which line to go to.

D. At UMW, students graduating in even years are said to be "Goats". Students graduating in odd years are said to be "Devils". Write a program to ask the user what year they are graduating, and tells them if they are a Devil or a Goat.

E. Write a program to check if a date is valid. You should ask the day and the month and then print whether it's valid based on that. For instance, 10/2 is a valid date, but 9/31 is not. You can ignore leap years for this.

F. Lots of companies pay time-and-a-half for hours worked over 40. Write a program to read in the number of hours an employee worked, and their pay rate. Then print out their pay for that period.