1. What is wrong with the following program? Assume the user enters the value 10.

```
1 val = input("Enter a number")
2 if val < 10:
3     print("less than 10")
4 else:
5     print("greater than or equal to 10")
```

2. What is the output of each of the following print statements?

```
1 print(1 < 2)
2 print(1 == 2)
3 print(1 != 2)
4 print(10 <= 20)
5 print(not True)
6 print(10 < 20 and 20 > 14)
7 print(10 > 20 or 10 < 20)
8 print(True or False and False)
9 print(not True and False)
```

3. What is the output of the code snippet?

```
1 print('1')
2 if 1 > 2:
3     print('2')
4 elif 2 != 3:
5     print('3')
6 elif 3 < 4:
7     print('4')
8 else:
9     print('5')
10 print('6')
```

4. What is wrong with the following code snippet?

```
1 if 2 = 2:
2     print("equal")
3 else:
4     print("not equal")
```

5. What is the output of the code snippet?

```
if 1 > -2:
    print('1')
    if 2 != 3:
        print('2')
    if 3 < 4:
        print('3')
else:
    if 4 == 4:
        print('4')
print('5')
```

6. What is the output of the code snippet?

```
def doSomething(a, b):
    if a > b:
        print("herp")
    else:
        print("derp")

doSomething(1,2)
doSomething(2,1)
doSomething(1,1)
doSomething(-1,-2)
```

7. Write a function that takes a string indicating the color of a traffic light. The function should print the next color in the sequence. Outside of the function, prompt the user to enter the color and invoke the function using the color as the argument. Assume the colors are lowercase and typed correctly. If the color is invalid, print an error message.