Quiz 8

1. Consider the following variable declarations:

```
x = 1
y = 2
z = 3
b = True
ch1 = 'A'
ch2 = 'B'

def is_even(n):
    return n % 2 == 0
```

Write a new boolean expression that is the negation of each of the following Boolean expressions. You need to apply De Morgan's laws to simplify the expression rather than simply writing a "**not**" at the beginning of each entire expression.

	`x > 1`	`Acceptable:  x <= 1` `Not acceptable: not (x > 1)`
(a)	`x > 1 and y > 2 or z > 3`	
(b)	`x % 2 != 0 or ch1 == ch2`	
(c)	`ch1 >= '0' and ch1 <= '9'`	
(d)	`not is_even(x) or ch1 == 'X'`	

2. What is the output for the following code. Write 'error' if you think the code will crash during execution.

```
# Part 1
a = [1, 2]
b = [a, [3,4]]
a[0] = 5
print(b)
```

Answer:

[[5,2],[3,4]]

```
# Part 2
def do_something(numbers):
    temp = numbers[0]
    numbers[0] = numbers[-1]
    numbers[-1] = temp

numbers = [1, 2, 3]
do_something(numbers)
print(numbers)
```

Answer:

[3, 2, 1]

3. Draw the memory state diagram for the following program at the point of time when the program reaches line 4:

```
1  def do_magic(numbers):
2      copy = numbers
3      copy[0] = 2
4      # How does the memory state diagram look here?
5
6  numbers = [1]
7  do_magic(numbers)
8  print(numbers)
```

Answer:

4. The program below does the following:
    a. it keep prompting the user for a response until he said yes or no (case-insensitive).
    b. If the user says yes, print "*flying kiss*".
    c. Otherwise, print "*heart broken*".
    d. For any wrong response, the program will print an ellipsis ("...").

Sample Run 1:

```
will you marry me?What
...
will you marry me?Say louder
...
will you marry me?Yes
*flying kiss*
```

Sample Run 2:

```
will you marry me?Yoyo
...
will you marry me?repeat again
...
will you marry me?NO
*heart broken*
```

The implementation below is buggy. Identify and correct **ALL** execution and logic errors (i.e., errors that cause the program to behave incorrectly when executed).

```
# Answer:



input = input('will you marry me?')

response.lower()

while input != 'Yes' or input != 'No':

    print('...')

    input = input('will you marry me?')
    input.lower()


if response is 'Yes':

    print('*flying kiss*')

else:

    print('*heart broken*')
```