CS 50 – Spring 2026
Lecture 03

1.. After executing each snippet of code, the variable `val` stores a value of type `bool`. What value does it store?

A) `val = (5 > 0 and 5 < 10)`

B)
```
n = 25
val = (n % 2 == 0 or n % 3 == 0)
```

C)
```
s = "string"
val = ("String" != s)
```

D) `val = not True and False`

2. Define a function `double_or_half` that takes one parameter (an int). If the input is odd, it returns a value twice as big as the input value. If the input is even, it returns half the input value. It should always return an int.

3. Consider the following program:

```
def exercise3(num)
    if num % 4 == 0:
        print(4*num)
    if num % 2 == 0:
        print(2*num)
    else:
        print(num)
```

What does exercise3(2) print?
What about exercise3(3)?
What about exercise3(4)?
What about exercise3(5.0)?

4. Consider the following program:

```
def exercise4(x):
    if x == 47:
        print("mine too!")
    else:
        if x > 100 or x < 0:
            print("mine is 47")
        else:
            if x == 13:
                print("13!")
            else:
                print("?")
        print(":-)")
    print("!")
```

Convert this to a function with the same behavior that doesn't use nested statements.