

Exam I Redo Problems

Directions: If you earned less than a **Complete** on Exam #1, your individual rubric sheet will list which problem(s) you need to do, and the due date (likely 9/30/22). Below are the problems you will choose from. **Please turn in your original in-class Exam and your rubric sheet** when you turn in the redo.

1. **Booleans** If you need to rework one or two, please make sure to include a brief explanation, and show your work to receive credit.

- (a) True or ((5 > 2) and (6 != 5))
- (b) ('test' < 'text') and (False or (True and False))

2. **Tracing** Trace the execution of the following Python program.

(a)

```
x = 7
y = 12
z = y - x + 1
z = z + 2
if z == z + 2:
    x = 9
elif x == 9:
    y = 5
else:
    x = 2
    y = 8

z = x + y
```

(b)

```
a = 4
b = 5
s = 'sad'
t = 'happy'

if s < t or a > b:
    a = a + b

    if a == a + b:
        w = 'now'
    else:
        w = 'then'

else:
    if b != a:
        w = 'later'
        b = b - a
    else:
        w = 'gator'
        a = a + b
```

3. Coding of Functions

- (a) Write a function `pairs` which, given three integers a , b , and c , returns `True` if exactly two of them are equal and `False` otherwise.

For example:

`pairs(5, 2, 5)` returns `True`

`pairs(1, 2, 3)` returns `False`

`pairs(4, 4, -4)` returns `True`

`pairs(7, 7, 7)` returns `False`

- (b) Usain Bolt wants to write a function `run_today` to decide whether the weather is good enough to go for a run. The weather will always be a combination of a temperature (an integer, which could be positive, negative, or zero) and a `str` condition, which has multiple possible values.

If the temperature is less than 10 or greater than 100, he will not run, and so it should return `False`, except if the condition is `'rain'` in which case he will not run unless the temperature is between 40 and 80 (inclusive). Finally, if the condition is `'cloudy'` he will run no matter the temperature, even if the temperature is above 100 or below 10.

The function should return `True` if he will run and `False` if he will not.

For example:

`run_today(75, 'sunny')` will return `True`

`run_today(5, 'sunny')` will return `False`

`run_today(50, 'rain')` will return `True`

`run_today(95, 'rain')` will return `False`

`run_today(120, 'cloudy')` will return `True`