

Test A

Name: _____

Part 1: choose correct answers

1. What is the result of `[1, 2] + [3] * 2` ?
- a. `[1, 2, 3, 3]`
 - b. `[1, 2, 6]`
 - c. `[1, 2, 3, 6]`
 - d. Error
2. What will this print?

```
x = 10
def func():
    global x
    x = 5

func()
print(x)
```

- a. 10
- b. 5
- c. `SyntaxError`
- d. Nothing

3. Which expressions will result to `True` ?
- a. `"5" == 5`
 - b. `0.1 + 0.9 == 1`
 - c. `[] != []`
 - d. `bool("False") == True`
4. How many iterations will `range(2, 10, 2)` give?
- a. 5
 - b. 8
 - c. 4
 - d. 0
5. What will be printed after running this code?

```
a = [1, 2, 3, 1, 2, 4]
s = set(a)
s |= {4, 5}
s.discard(5)
print(s & {3, 7, 8})
```

- a. `{1, 2, 3, 4, 5, 7, 8}`
- b. `{1, 2, 3, 4}`
- c. `{3}`
- d. `{1, 2, 3, 4, 7, 8}`

Part 2: write down your answer

6. How to stop the loop with keyword? How to skip an iteration?
7. What is the difference between `list` and `set` ? Write a few methods that differ between them (at least two for each).
8. What is included into functions signature?
9. How to accept many non-keyword arguments into a function? Give a short example.
10. When does `finally` block work out in `try / except` ? Give a short example.

Part 3: write a code

11. Write a function called `group_by_year` that groups dates by year.
Dates are being passed in format `DAY.MONTH.YEAR` one-by-one through console until `STOP` word passed.
If passed dates format incorrect your program have to raise `ValueError`.
12. Write a function that changes diagonals in a square matrix.
For example:

```
[
    [1, 2, 3], # swap 1 and 3
    [4, 5, 6],
    [7, 8, 9]  # swap 7 and 9
] =>
[
    [3, 2, 1],
    [4, 5, 6],
    [9, 8, 7]
]
```

13. Write a program that finds files with the same name inside of file system.
File names are passed as a list with possible list inside it. As a result return not unique names across file system.
For example:

```
["file.txt", "other.txt", ["new.txt", ["file.txt"]]]
# result has to be ["file.txt"] (as a list or set)
```