Phys 50733 Python Review HW0

Danette Farnsworth

January 15, 2025

1 Questions

1) Which built-in Python datatype best matches each of the following?

- 103 (**int**)
- "103" (**str**)
- '103' (**str**)
- 103 (**float**)
- [103] (**list**)
- (103) (**tuple**)
- True (**bool**)
- "True" (**str**)

2) Consider the code snippet below. What will be printed to the screen?

```
for i in range(10):
    if i % 2  == 0:
        print(i)

    0
    2
    4
    6
    8
```

3) Consider the logical expressions below. Mark each as "T" or "True", "F" or "False", or "X" or "Fails" if Python will not consider the comparison valid.

- $10 == 10.0$ (**True**)
- $500 > 500.0$ (**False**)
- $0.1 + 0.1 + 0.1 == 0.3$ (**False**)
- "one" $== 1$ (**False**)
- "two" > 1 (**X**)
- "10" $== 10$ (**False**)

4) The code below will throw an error. Why? Can you fix the code by modifying one line and adding another?

Because y does not exist.

```
def line(x, m, b):
    y = m * x + b:
    Return y

y  = line(5, 1, 1)
    print(y)
```

5) Consider the code below. What will be printed?

```
import numpy as np

num = np.arragnge(0, 10, 1)
print(np.where(nums %2 ))
print(nums[np.where(nums % 2)])
print(np.where(nums % 2 == 0))
print(nums[np.where(nums % 2 == 0)])

nums = np.arange(10, 20, 1)
print(np.where(nums %2 ))
print(nums[np.where(nums % 2)])
```

(array([1, 3, 5, 7, 9]),)
[1 3 5 7 9]
(array([0, 2, 4, 6, 8]),)
[0 2 4 6 8]
(array([1, 3, 5, 7, 9]),)
[11 13 15 17 19]