

## CSE 160 Section 2 Problems

### Data Types

1. Evaluate each expression as if you were to enter it into a Python interpreter. What is the data type (e.g., integer, string) of each resulting value?

- a. 42
- b.  $42 + 91 / 3.0$
- c.  $42 / 5 + 2.0$
- d. True
- e.  $42 < 45$
- f. `not 42 < 91`
- g. "May the force be with you."
- h. `float(3) < 9`

### Lists, Range, & Loops

2. For each list, write an equivalent call using `range()`. For each call using `range()`, give the corresponding list.

- a. [0, 1, 2, 3]
- b. [-4, -3, -2, -1, 0]
- c. `list(range(0, 10, 2))`
- d. `list(range(2, 11, 3))`
- e. [25, 20, 15, 10, 5, 0]
- f. `list(range(1000, -100, -100))`

3. What is the output printed by the following program?

```
for value in [1, 3, 5]:  
    print(value + value ** 2)
```

4. Write a for loop that will print the result of multiplying 3 by the numbers 8 through 12. The example solution is two lines long. Your output should read:

```
24  
27  
30  
33  
36
```

## Nested Loops & If Statements

5. What is the output printed by the following program?

```
for i in [1, 2, 3]:
    for j in [1, 2, 3]:
        print(i + j)
```

6. What is the output printed by the following program?

```
sum = 0
for i in [1, 2, 3]:
    for j in [1, 2, 3]:
        sum = sum + i
print(sum)
```

7. Fill in the necessary code to count the number of times the letter "l" appears in all of the list words. (The output should be 5.)

```
words = ["hello", "world", "python", "yellow"]
l_count = 0
```

```
print(l_count)
```

8. Write code to print the number of people over 20 years old in the list ages.

```
ages = [20, 21, 20, 22, 19, 18, 14, 35]
```

9. Write code that calculates and prints out the number of people 30 years old and above, the number of people 20-29 years old, and the number of people under 20 years old in the list ages.

```
ages = [20, 21, 20, 22, 19, 18, 14, 35]
```