Computer Science
Operations in Python

Name 1: _____
Name 2: _____

1. We have talked about four types of values in Python: strings, integers, floats, and Booleans. Eight variables are defined below. Classify each variable by its type.

```
a = 4  Int
b = "a" String
c = 3.25 Float
d = True Bool
e = "True" String
f = "False" String
g = 5 Int
h = 4.0 Float
```

Check yourself: You should have two of each type.

2. Try the following lines of code in the Python shell. Note your output and then describe what you think each operator does for two strings, two integers, two floats, and two Booleans. You may need to try addition pairs to figure them out. Some of the operations may not be defined. Make note of these.

a. 14 + 3 17	a. 14.5 + 3.2 17.7	a. "foo" + "bar" 'Foobar'	a. True + True 2
b. 14 * 3 42	b. 14.5 * 3.2 46.400000 6	b. "foo" * "bar" Error	b. True * True 1
c. 14 / 3 4.66666	c. 14.5 / 3.2 4.53125	c. "foo" / "bar" Error	c. False / True 0.0
d. 14 // 3 4	d. 14.5 // 3.2 4.0	d. "foo" // "bar" Error	d. True // False Error
e. 14**3 2744	e. 14.5**3.2 5204.483154	e. "foo"**"bar" Error	e. False**True 0
f. 14% 3 2	f. 14.5% 3.2 1.6999999	f. "foo"% "bar" Error	f. False% True False

3. Let's look at "+" when two different types are used as the operands. Which of the following is allowed? What type of output do you get if it is allowed?

   a. integer + float Float Float Float Float Float
   b. float + integer Float Float Float Float Float
   c. integer + Boolean Int Int Float Int Int
   d. Boolean + integer Int Int Float Int Bool
   e. integer + string Error String Error Error Error
   f. string + integer Error String Error Error Error

This is very difficult to read. Perhaps a table w/ headings would be better.

4. Now try the above using "*".

5. Look at "/", "//", and "%" using floats and integers. How does the output differ?

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