## PYTHON AND CONTROL

## COMPUTER SCIENCE MENTORS

August 31 - September 4, 2020

## 1 Intro to Python

```
1. What Would Python Display?
  >>> 3
 >>> "csm"
  >>> x = 3
  >>> x
  >>> x = print("csm")
  csm
  >>> x
  >>> print(print(print("csm")))
  >>> def f1(x):
  \dots return x + 1
  >>> f1(3)
 >>> f1(2) + f1(2 + 3)
  >>> def f2(y):
  ... return y / 0
  >>> f2(4)
  >>> def f3(x, y):
  ... if x > y:
                return x
  ... elif x == y:
                 return x + y
  ... else:
                 return y
```

```
>>> f3(1, 2)
>>> f3(5, 5)
>>> 1 or 2 or 3
>>> 1 or 0 or 3
>>> 4 and (2 or 1/0)
>>> 0 or (not 1 and 3)
>>> (2 or 1/0) and (False or (True and (0 or 1)))
```

2. For the following expressions, list the order of evaluation of the operators and operands of the expression.

```
Example: add(3, mul(4, 5)) -> add, 3, mul, 4, 5

(a) add(1, mul(2, 3))

(b) add(mul(2, 3), add(1, 4))

(c) max(mul(1, 2), add(5, 6), 3, mul(mul(3, 4), 1), 7)
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	1.	Write a function	that returns	true if a nu	mber is d	livisible by	v 4 and fals	e otherwise
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2. Write a function, is\_leap\_year, that returns true if a number is a leap year and false otherwise. A *leap year* is a year that is divisible by 4 but not divisible by 400.

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3.	Write a function find_max that will take in 3 numbers, x, y, z, and return the max value. $x$ , y, and z are unique. Do not use Python's built-in max function. <b>def</b> find_max(x, y, z):				