

Self-assessment #2

Math 213W: Math with Mathematica

Your Name Here:

Questions:

1. In a paragraph, explain the command `Map` to someone learning *Mathematica*. Make sure to explain what it does, and discuss the syntax of the command, including inputs and outputs.

2. Consider the function that takes in a list and outputs a new list that consists of the reverse of the list with one more element at the end: the length of the original list. Create three copies this function that all do the same thing. Create one named function, create one function using the `Function` command, and create one unnamed function.

3. Predict what each of the following lines of code will return and include a sentence explaining your answer.

```
EvenQ[5]
```

```
PrimeQ[5, 6]
```

```
IntegerQ[Pi]
```

```
Module[{i = 0, j = 1, k},
  k = i + j + 2;
  If[OddQ[k], i, j]
]
```

4. Below is the *Mathematica* input and output for someone hoping to create a function that takes as input an integer, then depending on whether the number is even, an odd prime, or an odd non-prime, outputs a different phrase. How should the code be fixed to do the desired work?

[Clue: Below, the "I'm an odd non-Prime" is Red,
And the error given is "Too many arguments given in If command"]

```
checkItOut[{x_Integer}] :=
  If[EvenQ[x], "I'm Even!",
    PrimeQ[x], "I'm an odd Prime",
    "I'm an odd non-Prime!"]
checkItOut[3]
checkItOut[10]
checkItOut[3]
checkItOut[10]
```