

# Quiz #2

Math 213W: Math with Mathematica

Your Name Here:

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## Questions:

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

2. Predict what **MatchQ** will return in these instances and include a sentence explaining your answer.

```
MatchQ[5, Integer]
```

```
MatchQ[5, EvenQ]
```

```
MatchQ[{6}, _?(5 < # < 10 &)]
```

```
MatchQ[{6, 7, 8}, {___?(5 < # < 10 &)}]
```

```
MatchQ[{1, 2, 3, 4}, {_, 1, _}]
```

```
MatchQ[{1, 2, 3, 3, 2, 1}, {___, 3, ___, 3, ___}]
```

3. In two or more sentences, compare and contrast the following two lines of code. What will be the output when each of them is run?

```
Apply[Range, {3, 9, 2}]
Map[Range, {3, 9, 2}]
```

4. Consider a function that takes in a list of three entries and outputs the reverse of the list.

- Create a named function that does this.
- Create an unnamed function that does this.

5. 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"]

```
In[33]:= 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]
```

```
Out[34]= checkItOut[3]
```

```
Out[35]= checkItOut[10]
```