CMSC 330, Summer 2018 Quiz 1

Name _____

Instructions

- Do not start this quiz until you are told to do so.
- You have 15 minutes for this quiz.
- This is a closed book quiz. No notes or other aids are allowed.
- For partial credit, show all your work and clearly indicate your answers.

1. *(6 points)* Write a regular expression that accepts a password requiring:

   - at least one capital letter
   - at least one special character (i.e. an @,#,$,%)

```
([A-Z].*[@#$%])|([@#$%].*[A-Z])
```

2. *(6 points)* Write the expected output of each of the code snippets below, if there would be an error, write "fail". (Note that `inspect` just gives the string representation of the value as you'd see it in irb. For example, `nil.inspect` will yield "nil".)

(a)
```
a = []
a.push("hello")
a.push("world")
a[1] = "hello"
a[3] = "there"
a.each { |x| puts x.inspect }
```

```
"hello"
"hello"
nil
"there"
```

OR

```
hello
hello

there
```

(b)
```
a = [2, false, 4, 6, nil, true, 8, 10, "Hello"]
puts a.select { |x| x }.inspect
```

```
[2, 4, 6, true, 8, 10, "Hello"]

      OR

2
4
6
true
8
10
Hello
```

(c)
```
a = []
a["hello"] = "there"
a.push("world")
a.each { |x| puts x.inspect }
```

```
Fail
```

3. *(8 points)* Define a method `revMap` in the class `Array` that takes a code block and returns a new array whose elements are the result of calling the code block on each element in reverse order.
For example, `[1, 2, 3].revMap { |x| x * 2 }` would return `[6, 4, 2]`. (When you're writing the method, note that the variable `self` in the `revMap` method will refer to the array you're working on, like `this` in Java.)

```
class Array

  def revMap
    revArr = []
    self.each { |x|
      if block_given? then
        revArr.unshift(yield x)
      else
        revArr.unshift(x)
      end
    }
    revArr
  end

  OR

  def revMap
    self.map { |x| yield x }.reverse
  end

end
```