1. Compilation and Interpretation (4 points)
   a. What is the difference between compilation and interpretation?

   **Compilation converts source code into machine code and attempts to optimize/process during this step, examining the entire code; interpretation executes a single instruction at a time without this analysis.**

   b. Give an instance where you would use one over the other.

   **If we care about runtime performance we would likely use a compiled language.**

2. What are 4 attributes of a good programming language (list and BRIEFLY explain each in one sentence or phrase)? (4 points)

   **Look at slides 26-28 from first day of class.**
3. Give the output for the following Ruby programs or write FAIL if they would not execute or if they would produce an error. (10 points)

a. ```ruby
x = "string"
y = "string"
puts "yes" if x == y

x = 'hello'
y = 'world'
puts x + y
```

b. ```ruby
x = "My phone number is (301)-555-5555."
regex1 = /phone.*/
regex2 = \((\d{3})\)-\d{3}-\d{4}'
regex3 = '$'

if x =~ regex1
  puts "1"
  puts $1
end
if x =~ Regexp.new('phone.*' + regex2)
  puts "2"
  puts $1
end
if x =~ Regexp.new(regex2 + regex3)
  puts "3"
  puts $1
end
```

4. Complete the Ruby method below to print all integers from 0 to x that are odd. (x is a variable that is passed in). Hint: use %. (4 points)

```ruby
def printOdd(x)
  for i in (0..x)
    if (i % 2 != 0)
      puts i
    end
  end
end
```