0. (1 pts) What is the name of your CS8 lab/project partner? Note that your partner must be in the same lab section as yourself and you both must put each other for this to work.

Partner name: ____________________________________________________________

To answer the questions on this homework, it will be helpful to have a computer running Python. You can either use the computers in CSIL, or your own machine.

Read about the `range` statement on pages 33 and 34, and review the `print` statement. For example

<table>
<thead>
<tr>
<th>This Python code:</th>
<th>Results in this output:</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>for i in range(3); print (i)</code></td>
<td>0 1 2</td>
</tr>
</tbody>
</table>

1. With that in mind, answer these questions.

   a. (3 pts) What two lines of python will result in the sequences of numbers 3, 6, 9, 12, etc. up to 39, being printed, one per line?
b. (2 pts) What will be printed by:

```python
for i in range(5,1,-1):
    print(i)
```

c. (2 pts) What will be printed by:

```python
for i in range(7,6):
    print(i)
```

d. (2 pts) What is the Python code to print the sequence 20, 18, 16,..., 6 (i.e. even numbers going down by 2 each time, ending with 6)?

2. Read pages 45-82 about various ways to approximate the number $\pi$. Then answer these questions:

a. (2 pts) What is the purpose of typing `import math` at the top of a Python file, or as the first command in a session in Python?

b. (2 pts) If you have assigned a floating point value to the variable $x$, what do you type at the Python prompt to display the square root of $x$?
c. (2 pts) What do you type at the Python prompt to display the square of $x$?

d. (2 pts) What do you need to do first to be able to generate and use random numbers in Python?

e. (3 pts) What do you type to generate a random integer from 1, 2, 3, …, 29?

3. (3 pts) What is the result of evaluating the Boolean expression `not (True or False)`?

4. (4 pts) Write a selection statement that sets the value of a variable named `value` to 1 if a variable named `result` is equal to 1000. Set `value` to 2 otherwise.

End of hw2