

In []:

```
# Initialize Otter
import otter
grader = otter.Notebook("generate-gradescope.ipynb")
```

In [1]:

```
import matplotlib.pyplot as plt
import numpy as np
```

Question 1. Assign `x` to the smallest prime number.

In [22]:

```
x = 2 # SOLUTION
```

In []:

```
grader.check("q1")
```

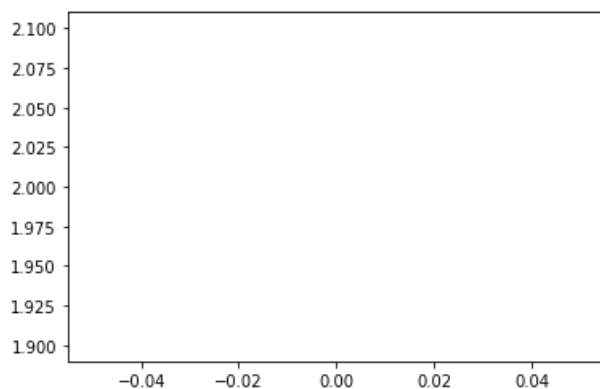
Question 2. Visualize the answer

In [28]:

```
## solution ##
plt.plot(x); # SOLUTION NO PROMPT
""" # BEGIN PROMPT
plt.plot(...);
""" # END PROMPT
```

Out[28]:

```
' # BEGIN PROMPT\nplt.plot(...);\n'
```



This cell is not part of a question.

In [29]:

```
y = 3
```

Question 3. Define `square` and assign `nine` to 3 squared.

In [30]:

```
def square(x):  
    y = x * x # SOLUTION  
    return y # SOLUTION  
  
nine = square(3)
```

In []:

```
grader.check("q3")
```

Question 4. What does equilateral mean?

Type your answer here, replacing this text.

SOLUTION: Having equal side lengths.

In [14]:

```
# this isn't part of a question  
# it's here to make sure that we get a MD cell above to close the export  
# of question 4
```

Question 5. Approximate the area and circumference of a circle with radius 3.

In [15]:

```
pi = 3.14  
if True:  
    # BEGIN SOLUTION  
    radius = 3  
    area = radius * pi * pi  
    # END SOLUTION  
    print('A circle with radius', radius, 'has area', area)  
  
def circumference(r):  
    # BEGIN SOLUTION NO PROMPT  
    return 2 * pi * r  
    # END SOLUTION  
    """ # BEGIN PROMPT  
    # Next, define a circumference function.  
    pass  
    """; # END PROMPT
```

A circle with radius 3 has area 29.5788

In [16]:

```
# This question has no tests.
```

Question 6. Write something

This question has a custom prompt below, so that prompt should be in the output. It also has no solution!

Write your thing here.

SOLUTION: some thing

Question 7: What is the answer?

Type your answer here, replacing this text.

SOLUTION: 42

Question 8: Test intercell seeding by generating 10 random $N(4, 2)$ numbers.

In [35]:

```
np.random.seed(42) # SEED
z = np.random.normal(4, 2, 10) # SOLUTION
z
```

Out[35]:

```
array([4.99342831, 3.7234714 , 5.29537708, 7.04605971, 3.53169325,
       3.53172609, 7.15842563, 5.53486946, 3.06105123, 5.08512009])
```

In []:

```
grader.check("q8")
```

You're done!

The code below is an example of student-exposed plugins.

In []:

```
grader.run_plugin("myotterpackage.MyOtterPlugin", pi, z, foo=circumference, bar=None, something='else')
)
```

Submission

Make sure you have run all cells in your notebook in order before running the cell below, so that all images/graphs appear in the output. The cell below will generate a zip file for you to submit. **Please save before exporting!**

In []:

```
# Save your notebook first, then run this cell to export your submission.
grader.export()
```