HW 11 - turn in one week from today in Canvas

Turn in the 4 questions as a single .py file onto canvas. Use comments to clearly indicate which question you are working on. Your filename should end as _py2.py if you use Python2 and _py3.py if you use Python3.

Consider the data generated by the following code:

```
import numpy as np
import matplotlib.pyplot as plt
np.random.seed(1)
x = np.random.random(20)*2.0
noise = np.random.normal(size=20)
y = 2.0*x - 3.2 + noise
plt.figure()
plt.plot(x,y,'o')
plt.show()
```

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1. Fit a linear model where $y(x)$ to the data. Print the R^2 value.
2. Fit a quadratic polynomial (degree=2) to the data. Print the R^2 value.
3. Fit a polynomial degree=10 to the data. Print the R^2 value.
4. Plot the results of the three models with the data. Which model is the best?