Section 7.1 Worksheet:

Assigned problems: Exercises pp. 348-350, #5, 10, 16, 24, 37, 42, 54, 62, 66, 68

1. Review Theorem 1, p. 344 carefully. Hopefully you already know these laws of exponents, but be on the safe side and review them!

2. What is the most important property of e^x from the standpoint of integral and differential calculus?

3. Written references to π go back how far? What important property do π and e share?

4. What are the important graphical and behavioral properties of an exponential function? How do they compare to polynomial functions? What are their asymptotic properties?

Notes:

1. The exponential function is crucial for many areas of study, from business (where the stock market and your bank account grow exponentially), to biology (populations grow exponentially at times of their life cycles), to all other areas of science.

2. The most important base of an exponential function is $e \approx 2.718$. We'll see that one can represent any exponential function, no matter what the base, using e. The exponential function with e as its base is called the natural exponential function.