San José State University
Fall 2015
Math-8: College Algebra
Section 03: MW noon–1:15pm
Section 05: MW 4:30–5:45pm

Quiz #14 (Take-home)

1. We saw in class that a^x for $x \in \mathbb{R}$ is the value that a^x approaches as we get closer and closer to x with a sequence of rational numbers. This works for the base as well. We were also introduced to the special base $e = 2.71828\ldots$, known as Euler's number. Calculate e^2 on your calculator and show how 2^2, 2.7^2, 2.71^2, ... approaches e^2. Look at 6 such terms.

2. Sketch the graph: $y = e^{-x+2} + 1$. (Hint: factor out the negative in the exponent first).

3. Determine the amount of money in a savings account after 5 years at a yearly interest rate of 2% assuming that the original principle is \$10000 and the compounding rate is: a) monthly, and b) continuous.

4. The half-life of Uranium-235 is about 700 million years. What percent of a sample is left after only 100 million years?

5. Evaluate:

a. $\log_2 256$

b. $\log_{10} 10000$

c. $\ln 5$

6. Solve:

a. $\log_3(x+1) = \log_3(13)$.

b. $10 \log_7(7^{x-2}) = 5^{\log_5(2x-1)}$

7. Determine the domain for $f(x) = \frac{\log_3(x^2+7x+12)}{\sqrt{x-1}}$