Math 70
Final Review

1. A triangle has vertices $(0, -5)$, $(2, 6)$ and $(-1, 14)$. Write a system of inequalities that would have this triangle as the feasible region, or the solution space.

2. Suppose that the peak amount of a caffeine in someone's body after drinking a cup of coffee is 200 mg. After 5 hours it is at 100 mg. Construct an exponential decay function and sketch a graph of that function.

3. Write an equation and a table for a the function $\log_2(x)$ shifted down 3 and to the right 7.

4. Noise levels are measured in units called decibels (dB). We define I_0 to be the intensity of a sound at the threshold of human hearing measured in watts/cm^2. Then I is the intensity of an arbitrary sound measured in watts/cm^2. The noise level N in Decibels is defined to be

$$N = 10 \log(\frac{I}{I_0})$$

If a train is producing a sound at 110 decibels, and noisy street traffic is measured to be making a noise at 80 decibels, how much greater was the intensity of the sound of train than the street? (Compare their original intensities measured in watts/cm^2)