Assignment 2b revised to include the wording of the exercises
Due Tuesday, September 10, 2013

- On page 44 of Rigden do exercises 10 and 11.

  10. A sound source far removed from reflecting surfaces has an intensity measured to be 0.5 W/m^2 at a distance 20 m from the source. What would be the intensity of this sound if it were measured at a distance of
  (a) 10 m from the source?
  (b) 30 m from the source?

  11. A sound has an intensity of 10^{-5} W/m^2. What is the SL of the sound?

- On page 56 of Rigden do exercise 2.

  2. Logarithms again. Suppose the intensity of a sound is $4x10^{-6}$ W/m^2, what is the sound-intensity level?
  $SL= 10 \log [I/I_{0}] = 10 \log [(4x10^{-6})/(1x10^{-12})]$
  $SL = 10 \log 4x10^{6} = 10 [\log 4 + \log 10^{6}] = 10 [0.602 + 6] = 10 [6.602]$
  SL= 66 db
  Notice that the log of the product $4x10^{6}$ is the sum of the log 4 (Table 3.2) and log 10^{6}.

  What is the SL of a sound having an intensity of $6x10^{-5}$ W/m^2?