

Name _____ Lab Section (day) _____

1. (4 points) What is the main experiment that you will perform in lab this week (Lab 3)?
2. (3 points) Briefly explain why it is important that you gently mix your sample tubes after adding ARS II solution, which contains SDS and NaOH.
3. (6 points) Name three properties that modern cloning vectors possess that make their use in cloning DNA fragments efficient?
 - A.
 - B.
 - C.
4. (6 points) You have a DNA sample and you want to determine its concentration. You start by taking a portion of the DNA sample and dilute that portion 100-fold, then you measure the absorbance of this dilution at 260 nm using a spectrophotometer.
 - A. If you get an A_{260} reading of 0.5, what is the DNA concentration in $\mu\text{g/ml}$ of your 100-fold diluted sample? (Use the conversion formula that 1 A_{260} unit is 50 $\mu\text{g/ml}$.)
 - B. What is the concentration of the original (undiluted) DNA sample in $\mu\text{g/ml}$?
 - C. What is the concentration of the original DNA sample in $\mu\text{g}/\mu\text{l}$?
5. (6 points) How do you make a 500-ml solution consisting of 1X TBE and 0.5M NaCl using a 10X stock solution of TBE and powdered NaCl? (Assume the molecular weight of NaCl is 60 daltons).