PCR Calculation Exercise

1. You are making 40 µl reactions. You are using 4 µl DNA template, 8 µl 5x PCR buffer, 4 µl dNTPs (10 mM), 4 µl $MgCl_2$ (50 mM), 1 µl DMSO, 2 µl each of LCO149013 (20 µM) and HCO2198M13 (20 µM) primers, and 0.2 µl TAQ enzyme (2000 units/ml). How much deionized water will you need?

   You will be amplifying samples #186 thru 210. You are setting up two (2) extra reactions to compensate for pipetting error.[1]

2. You are making 40 µl reactions. You are using 3 µl DNA template, 8 µl 5x PCR buffer, 4 µl dNTPs (10 mM), 4 µl $MgCl_2$ (50 mM), 2 µl each of LCO149013 (20 µM) and HCO2198M13 (20 µM) primers, and 0.2 µl TAQ enzyme (2000 units/ml). How much deionized water will you need?

   You will be amplifying samples #2424 – 2430. You are setting up one (1) extra reaction to compensate for pipetting error.

3. You will make 50 µl reactions. You want to use 5 µl DNA template. You are using 8 µl 5X PCR buffer, 5 µl of dNTPs (10 mM), 4 µl of $MgCl_2$ (50 mM), 3 µl each of forward and reverse primers Sar100 and Sbr101, and 0.3 µl TAQ enzyme (2000 units/ml). How much deionized water will you need?

   You will be amplifying samples:
   254
   342
   765
   857
   2038
   2341
   2342
   5436
   7869
   9870
   9981
   9999
   You are setting up one (1) extra reaction to compensate for pipetting error.

[1] Don't forget to setup a BLANK.