**GROUP \_\_\_\_**

**DIFFERENCE IN DIFFERENCES WORKSHEET**

Do free laptop computers improve student outcomes? Suppose São Paulo, the capitol of Brazil, instituted a free laptop program in all of its elementary schools in 2009. Suppose also that Rio de Janeiro, another large city a few hundred miles up the coast, did NOT implement the program.

1. You have average elementary school test scores in São Paulo and Rio de Janeiro for the end of the 2009 school year. Why is the difference between them a poor measure of the effect of the program?
2. You get the average test score for São Paulo students in 2008. Why is the difference between this and the average São Paulo score in 2009 a poor estimate of the effect of the program?
3. Suppose you have the average test scores for both São Paulo and Rio for 2008 and 2009. Can you use these to improve upon the estimate suggested in Q1? How about Q2? Hint: Think about the Q1 and Q2 differences in terms of Treatment on the Treated and Selection Bias.