Table Number:__________ Group Name: ________________________

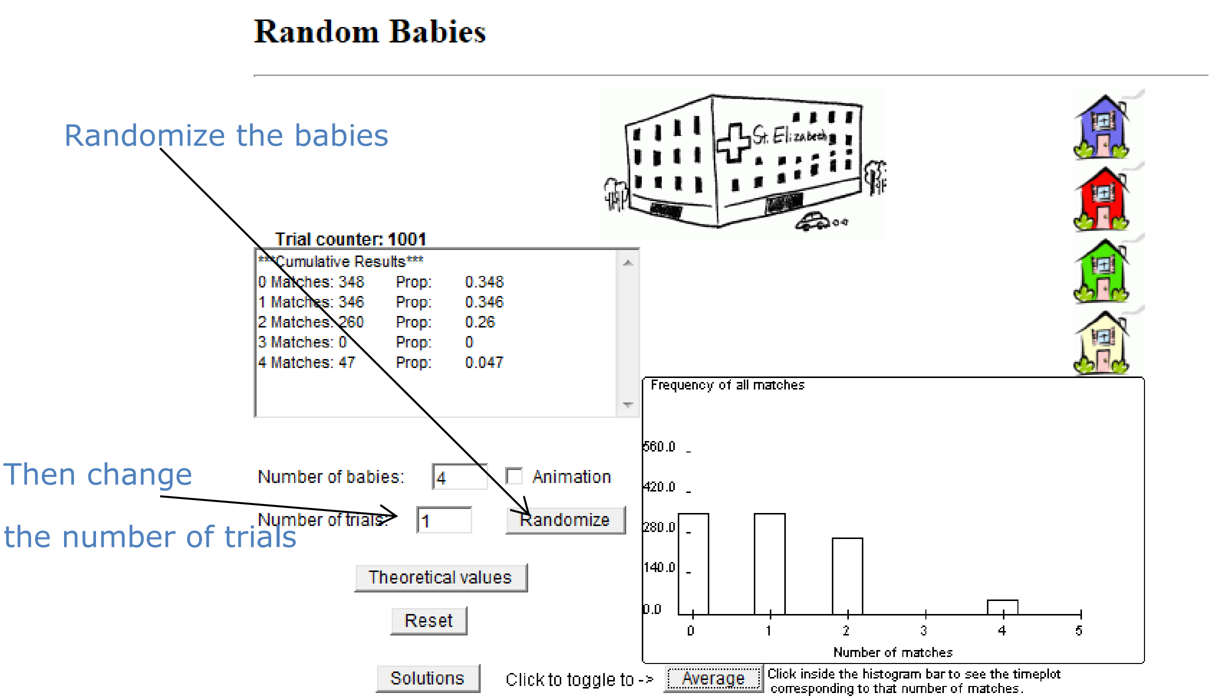
Group Members:_____________________ _____________________ _____________________

Random Babies (Cont'd)

HAND IN THIS PAGE AND THE NEXT. WORK WITH YOUR GROUP AND HAND IN ONE COPY FOR THE GROUP. I WILL GRADE FOR ACCURACY AND NEATNESS. THE ASSIGNMENT IS WORTH 10 POINTS.

We can approximate these probabilities more accurately by performing more trials. Do the following with your group of three students.

1. Use the Random Babies applet available in our Blackboard course (in the Course Content folder, then Classroom Materials, then Chapter 5) to simulate this random process. Leave the number of trials at **1,** then click **Randomize** five times. Then turn off the **Animate** feature and ask for **995** more trials, for a total of 1000 trials.



2. Record the counts and proportions in the following table

Number of matches	0	1	2	3	4	Total
Count						
Proportion (out of 1000)						1.00

3. Are these simulation results reasonably consistent with the results obtained at your table? Explain.

4. Report the new (likely more accurate) empirical estimate that at least one mother gets the correct baby.

5. Click the bar of the histogram corresponding to 0 matches to see a graph of how the relative frequency changes over time. Does this graph appear to be fluctuating less as more trials are performed, approaching a limiting value? Describe what you see.

6. Is an outcome of exactly 3 matches possible? Why or why not?

7. Is it impossible to get four matches? Is it likely?

Adapted from Activity 11-1: Random Babies in Rossman and Chance (2012), *Workshop Statistics, 4th ed*. John Wiley & Sons.