Your Name: _____

Names of people you worked with: _____

Instructions: Work on this problem in class with your group. Do your best. This piece of paper will be collected during class.

Task: Consider a study investigating gender discrimination in the 1970s, which is set in the context of personnel decisions within a bank.[1] The research question we hope to answer is, "Are females discriminated against in promotion decisions made by male managers?"

The participants in this study were 48 male bank supervisors attending a management institute at the University of North Carolina in 1972. They were asked to assume the role of the personnel director of a bank and were given a personnel file to judge whether the person should be promoted to a branch manager position. The files given to the participants were identical, except that half of them indicated the candidate was male and the other half indicated the candidate was female. These files were randomly assigned to the subjects. The data are as follows:

	decision		
	promoted	not promoted	total
male	21	3	24
female	14	10	24
total	35	13	48

Use playing cards to represent the data and to simulate a randomization test.

1. What does each playing card represent? How many cards are there?

2. What do the red and black colors of the cards represent? How many red and how many black cards do you have?

3. What does shuffling the cards represent?

4. What does dealing the cards into two groups represent? How many cards do you deal into each group?

5. Provide a few different values for the difference in proportions (male minus female) from the simulation model.

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[1]Rosen B and Jerdee T. 1974. Influence of sex role stereotypes on personnel decisions. Journal of Applied Psychology 59(1):9-14.

Solution:

1. What does each playing card represent?

   Each card represents a person, there are 48 cards, the same as the number of observations in the dataset.

2. What do the red and black colors of the cards represent? How many red and how many black cards do you have?

   There are 35 black and 13 red cards. The black cards represent getting promoted, the red cards represent not getting promoted.

3. What does shuffling the cards represent?

   Shuffling the cards breaks the relationship between gender and promotion. That is, when the cards are shuffled, the null hypothesis is forced to be true.

4. What does dealing the cards into two groups represent? How many cards do you deal into each group?

   Dealing the cards represents running the experiment (under the true null hypothesis setting). Deal into 2 groups, 24 men and 24 women. That is, randomly assign whether a person will get promoted, but do so under the setting that the gender has no relationship with the promotion status.

5. Provide a few different values for the difference in proportions (male minus female) from the simulation model.

   The differences in proportions should range between about -0.25 and +0.25.