Worksheet: Do you know what to do with data?

Instructions: For each of the following data sets, try to perform a correct analysis without looking back at the formulas in your text, or on your worksheets. If you must look back, it’s OK to do so, but make sure you try to fix in your memory which formulas are used where.

1. Do dogs look like their owners? To test this theory, 25 dog owners and their pets took part in a study. Volunteers were shown a picture of the dog owner, as well as pictures of two dogs, one of which was the dog actually owned by that person. The volunteer then had to guess which dog belonged to the person. The data for this study is as follows (here, 1 means “match” and 0 means “no match”):

   \[1, 1, 0, 1, 1, 1, 1, 0, 1, 0, 0, 0, 1, 1, 0, 1, 0, 1, 0, 1, 1, 1\]

   (The data is from the text, DogOwner.rda.) Form a confidence interval for the proportion \( p \) of dog owners who resemble their pets, and perform some appropriate hypothesis test.

2. How many Facebook friends do students have? Data for 40 students is as follows:


   (The data is from the text, FacebookFriends.rda.)

   - Form a histogram of the data
   - Form a boxplot of the data
   - Form a confidence interval for \( \mu \), the mean number of Facebook friends that each college student has.
   - Perform some appropriate hypothesis test. (Note: the challenge here will be to form \( H_0 \). Think creatively about ways to generate a null hypothesis.)