

Name: \_\_\_\_\_

## Pre-Lab: Animal Behavioral Diversity and the Scientific Method

1) (3 pts) You just saw a dog food commercial on TV that states that dogs prefer Alpo over Kal-Kan. Think about how you could conduct an experiment to test whether or not this statement is true. State your null and alternative hypotheses. What response variable would you use in your experiment?

null hypothesis:

alternative hypothesis:

response variable:

2) (7 pts) Suppose that you are trying to determine if a coin you have is biased towards flipping more or less heads than the expected 50%. Thus,

$H_0$  = the coin is 'fair', that is #Heads = #Tails

$H_A$  = the coin is biased, that is #Heads  $\neq$  #Tails

Take a coin and flip it 16 times and record the number of heads and tails you flip. Using these data and the graph on BehDiv-10, determine the probability that your coin is biased. Show your work.

