PBIO 294 questions.   30 Aug 2017

Name _____

Kruschke chapter 2.

1. Consider the example of the manufactured bouncy balls that are manufactured in four discrete sizes: diameters of 1.0, 2.0, 3.0, and 4.0 (assume units are cm). The manufacturing process is quite imprecise ('noisy'), however. Assume the noise follows a Normal distribution with mean=0 and variance σ^2=1. You sample 3 balls of diameter 1.77, 2.23, and 2.7 that were manufactured to be of the same diameter. The prior probability of the balls being from a given diameter are equal. What is the probability of the ball diameter being 1.0, 2.0, 3.0, and 4.0. Show your work. (refer to K2.1.1 pages 20-21 for more details).

2. Explain why the 'cloud' of credible regression lines in the left side panel of Figure 2.5 (K2.3, page 26) have the characteristic shape that they do, e.g., narrow range in center of plot but broader towards edges?

3. Exercise Kruschke 2.1

4. Exercise Kruschke 2.2