MONT 106N – Identifying Patterns
Group Discussion 1
September 11, 2009

Background and Goals

Last time we introduced the special bar graphs known as *histograms*. These are used to give graphical representations of the distribution of data. Recall that our histograms are always constructed so that the vertical scale is in a "density scale," and the *sum of the areas of the rectangular bars is equal to 100%*. The only way to really master a new mathematical idea is to practice using it, so today's class will be devoted to work in small discussion groups on the following questions. You will be handing in one set of solutions from each group *at the end of class*.

(A) The scores for the finishers in the 2002 LPGA Giant Eagle golf tournament were as shown in the following table.

Score range	Number of scores in that range
$202 - 204$	2
$205 - 207$	7
$208 - 210$	16
$211 - 213$	26
$214 - 216$	18
$217 - 219$	4

0. Decide on, and describe briefly, a good way to set up the intervals along the horizontal axis for a histogram here. For instance, what will the base of the rectangle for the score range 202 - 204 be? (These golf scores can only be whole numbers – they are numbers of shots made in three rounds of the course.)

1. Using your method from part 0, construct the histogram for the scores based on this information. (Note that you will need to determine the percentages here.)

2. What percentage of the field scored 210 or below?

3. What percentage of the field scored between 208 and 216 (including the endpoint scores of 208 and 216)?

(B) (Hypothetical – that is, these numbers are "made up," not from an actual study.) In a study of reaction times, an animal trainer obtained the following data, showing the numbers of dogs who reacted to a specific stimulus within certain time intervals. The ranges of reaction times are given in seconds. Group A consisted of dogs aged 1 to 2 years old, and group B consisted of dogs 7 years

and older.

reaction time t	group A	group B
$< .5$	10	1
$.5 \le t < .54$	12	3
$.54 \le t < .6$	6	4
$.6 \le t < .7$	8	16
$.7 \le t < .9$	4	14
$\ge .91$	2	4

1. Draw the reaction time histogram for group A.

2. Now superimpose the reaction time histogram for group B on the same axes.

3. How are the two histograms different? Describe briefly.