

# Math 382, Fall 2011. Homework 6

## Due Sept. 13

NAME \_\_\_\_\_

Notes: Chapter 3, Problems 5, 6, 7

### Problem 6A.

According to [ScanUS.com](http://ScanUS.com), the number of cars per household in an Albuquerque neighborhood was distributed as follows

$x$	0	1	2	3+
$P(X = x)$	0.047	0.344	0.402	0.207

3+ really means 3 or more, but let's assume that there are no more than 3 cars in any household.

Find the expected value and standard deviation of  $X$ .

### Problem 6B.

For the above Problem, the web site really reported the average of 1.9 cars per household. This is higher than the answer for the Problem 6A. Probably, it's due to the fact that we limited the number of cars by 3.

Suppose we limit the number of cars by 4. This means the distribution will look like

$x$	0	1	2	3	4
$P(X = x)$	0.047	0.344	0.402	$p_3$	$p_4$

where  $p_3 + p_4 = 0.207$ . Assuming that  $\mathbb{E}(X) = 1.9$ , reverse-engineer this information to find  $p_3$  and  $p_4$ .