

**CE 467 / 567 Highway Safety and Operations
Homework 1 Solutions**

Problem 2

- a. What percentage of the traffic fatalities in Arizona occur...
- (1) in single-vehicle crashes? $662/1177 = \mathbf{56.2\%}$
 - (2) in roadway departure crashes? $549/1177 = \mathbf{46.6\%}$
 - (3) in intersections or related to intersections? $237/1177 = \mathbf{20.1\%}$
 - (4) in alcohol-related crashes (i.e., with BAC levels over 0.01)? $492/1177 = \mathbf{41.8\%}$
 - (5) to passengers who are not restrained? (hint: be careful) $420/645 = \mathbf{65.1\%}$
- b. Geographically, what areas of the state have the highest fatality rates (fatalities per 100,000 population)?
The highest rate is in La Paz county, with several at a distance behind (Coconino, Apache, etc.)
- c. For Maricopa and Pima counties (the most populated counties in the state):
- (1) Are the overall fatality rates (fatalities per 100,000 population) in these counties higher or lower than the median of all US counties?
These are both lower than the median (23.23 / 100,000), with Maricopa at 12.76 and Pima at 13.73.
 - (2) Are the alcohol-related fatality rates in these counties higher or lower than the median of all US counties?
Again, these are both lower than the median (7.615). with Maricopa at 5.47 and Pima at 6.16.

[Other questions had no formal solution.]