You may work with in a group of as many as three students on this quiz, handing in one quiz with all names, provided that you all contribute to the work. Also please write your section number.

For questions 1 – 3, suppose that you encounter two traffic lights on your commute to school. Based on past experience, you judge that the probability is .45 that the first light will be red when you get to it, .35 that the second light will be red, and .25 that both lights will be red.

1. Produce a probability table to organize the given probabilities.

2. Determine the probability that at least one light will be red. Also name the relevant probability rule that you could use.

3. Determine the long-run percentage of days for which neither light will be red.

For questions 4 – 5, consider that the 2012 U.S. Pet Ownership and Demographics Sourcebook reports that 36.5% of American households have a pet dog and 30.4% have a pet cat.

4. Does it follow from this information that 66.9% (the sum of 36.5% and 30.4%) of American households have a pet dog or a pet cat? Explain/justify your answer.

5. Based on the information given, what is the smallest possible value for the percentage of American households that have a pet dog or a pet cat? Also describe the circumstance in which this smallest possible value would be attained.