

## Homework for Math 211, Summer 2010, Part 3

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I. Chapter 11: 9, 11, 15 (note that you are not actually asked to perform the simulation), 19 (describe your set-up completely), 20 (describe it completely!), 31 (describe it completely!).

Also:

1. Recently the state of Washington outlawed the use of a cell phone while driving. A local politician claims that the new law has reduced such cell phone use to just 15% of all drivers. But on your way to work this morning, you notice that of the ten drivers you pass, four are talking on their phone. Does this suggest the politician is incorrect? Use a simulation to estimate the likelihood of seeing at least 4 out of 10 randomly selected drivers talking on the cell phones if the actual rate of usage is 15%. Describe exactly what you are doing and explain your conclusion clearly. Use at least 20 trials.

2. Your little cousin loves a collectible trading card game called 'Bagomon'. He just needs four cards to complete his collection – 'Pikaboo', 'Magneprawn', 'Hypnotoad', and 'Venobutterfly.' Each booster pack contains exactly one of those four cards. 35% of all booster packs contain 'Pikaboo', 35% of all booster packs contain 'Magneprawn', 25% of all booster packs contain 'Hypnotoad', and the remaining 5% of booster packs contain 'Venobutterfly'. You buy your cousin 8 booster packs for his birthday. Explain how, using a simulation using random numbers, you could estimate the probability that he ends up getting all four cards that he wants in those 8 booster packs -- then perform that simulation, using at least 20 trials. (Remember that each booster pack contains exactly one of these four cards – no more, no less!)

J. Chapter 12: 7, 9, 12, 17, 18, 20, 25. (Also recommended: 31, 33, 38, 39). No bonus problems for this homework.

K. Chapter 13: 2, 7, 9, 11, 13, 19, 27, 29. (Also recommended: 12, 38, 39, 49, 52, 55). No bonus problems for this homework.

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