Name: _____

Elementary Statistics

- 1. Let A denote the event of placing a \$1 straight bet on the Florida Play 4 lottery and winning. The chance of event A occurring is 1 in 10,000.
 - a. What is the value of P(A)?
 - b. What is the value of $P(\overline{A})$?
- 2. Given that the following statement is incorrect, rewrite it correctly: "The probability of a baby being born a boy is 50-50."
- 3. Estimate the probability that the next time you ride in a car down Ulster Avenue in Saugerties, you will NOT be delayed because of a train that is stopped on the tracks and blocking the road.
- 4. You are asked by your teacher, "Which of the following is the mean of the first 100 digits of pi after the decimal point: 4.4, 4.5, 4.6, 4.7, or 4.8?" If you make a random guess for the answer to the teacher's question, what is the probability that you guessed the correct answer of 4.8?

For questions 5-7, express the indicated degree of likelihood as a probability value between 0 and 1:

5. When arriving at the traffic light that is closest to the principal's home, there is a 25% chance that the light will be red.

6. If you make a random guess for the answer to a true/false test question, there is a 50-50 chance of being correct.

7. It is impossible to pass a statistics test without studying.

8. When Mendel conducted his famous genetics experiments with peas, one sample of offspring consisted of 428 green peas and 152 yellow peas. Based on those results, estimate the probability of getting an offspring pea that is green. Is the result reasonably close to the expected value of ¾, as claimed by Mendel?

Date: ____

HW 4.2 part 2

9. In a NY Times poll, respondents were asked if it should be legal or illegal to use a hand-held cell phone while driving. 141 said that it should be legal and 663 said that it should be illegal.

a. What is the probability of randomly selecting someone who believes it should be legal to use a hand-held cell phone while driving?

b. Is it unlikely to randomly select someone with that belief?

10. In a recent year, 304 of the approximately 300,000,000 people in the United States were struck by lightning.

a. Estimate the probability that a randomly selected person in the United States will be struck by lightning this year?

b. Is a golfer reasoning correctly if he or she is caught out in a thunderstorm and does not seek shelter from lightning because the probability of being struck is so small?

11. A roulette wheel has 38 slots. One slot is 0, another slot is 00, and the others are numbered 1-36, respectively. You place a bet that the outcome is an odd number.

a. What is your probability of winning?

b. What are the actual odds against winning?

c. When you bet that the outcome is an odd number, the payoff odds are 1:1. How much profit do you make if you bet \$18 and win?

d. How much profit would you make on the \$18 bet if you could somehow convince the casino to change its payoff odds so that they are the same as the actual odds against winning?