Probability: Experimental vs. Theoretical

1) A baseball collector checked 350 cards in case on the shelf and found that 85 of them were damaged. Find the experimental probability of the cards being damaged. Show your work.

2) Jimmy rolls a number cube 30 times. He records that the number 6 was rolled 9 times. According to Jimmy's records, what is the experimental probability of rolling a 6? Show your work.

3) John, Phil, and Mike are going to a bowling match. Suppose the boys randomly sit in the 3 seats next to each other and one of the seats is next to an aisle. What is the probability that John will sit in the seat next to the aisle?

4) In Mrs. Johnson's class there are 12 boys and 16 girls. If Mrs. Johnson draws a name at random, what is the probability that the name will be that of a boy?

5) Antonia has 9 pairs of white socks and 7 pairs of black socks. Without looking, she pulls a black sock from the drawer. What is the probability that the next sock she pulls out will also be black?

6) Lenny tosses a nickel 50 times. It lands heads up 32 times and tails 18 times. What is the experimental probability that the nickel lands tails?

7) A car manufacturer randomly selected 5,000 cars from their production line and found that 85 had some defects. If 100,000 cars are produced by this manufacturer, how many cars can be expected to have defects?

The following advertisement appeared in the Sunday paper:

Chew DentaGum!

4 out of 5 dentists surveyed agree that chewing DentaGum after eating reduces the risk of tooth decay! So enjoy a piece of delicious DentaGum and get fewer cavities!

10 dentists were surveyed.

8) According to the ad, what is the probability that a dentist chosen at random does not agree that chewing DentaGum after meals reduces the risk of tooth decay?

9) Is this probability theoretical or experimental? How do you know?

10) Do you think that the this advertisement is trying to influence the consumer to buy DentaGum? Why or why not?

11) What could be done to make this advertisement more believable?