Math 110

Quiz 4 Sample

October 28, 2008

Be sure to show the calculations that lead to your answers.

1. What does the Law of Averages say?

2. An ecology class of 50 students has 25 men and 25 women. Eight students are chosen at random from the class to participate in river cleanup trip, what are the chances that 5 or more of the students will be male?

3. A gambler is playing roulette. On each play, he bets \$1 on *six numbers*, which pays 5 to 1. That is, if one of his block of six numbers comes up, he will win \$5 on a \$1 bet. Otherwise, he loses \$1.

   (a) Construct a box model for this bet. (*Hint*: There are a total of 38 slots on a roulette wheel.)

   (b) Compute the average and SD of the box?

   (c) If the bet is played 25 times, compute the EV and the SE for the bet.

   (d) What are the gambler's chances of winning \$5 or more on these 25 spins of the wheel? (*Hint*: Think probability histogram.)