Name

Elementary Statistics

 In a pre-liminary test of the MicroSort method of gender selection, 14 couples were treated and 13 of them had baby girls. If we plan to use the normal approximation to the binomial distribution for finding the probability of exactly 13 girls (assuming that the probability of a girl is 0.5), what is the continuity correction, and how would it be applied in finding that probability?

For question 2, use a normal approximation to find the probability of the indicated number of voters. In each case, assume that 100 eligible voters aged 18-24 are randomly selected. The most recent Census Bureau results show that among eligible voters aged 18-24, 22% of them voted.

2. Find the probability that exactly 19 voted.

- 3. In a Marist College poll of 1004 adults, 291 chose professional athlete as their dream job. Assume that 25% of adults consider being a professional athlete their dream job.
 - a. The result of 291 is more than 25% of 1004, so find the probability that among 1004 random adults, 291 or more consider being a professional athlete their dream job.

- b. If the value of 25% is correct, is the result of 291 unusually high?
- c. Does the result suggest that the rate is greater than 25%?
- 4. In a study of 420,095 cell phone users in Denmark, it was found that 135 developed cancer of the brain or nervous system. Assuming that the use of cell phones has no effect on developing such cancers, there is a 0.000340 probability of a person developing cancer of the brain or nervous system. We therefore expect about 143 cases of such cancers in a group of 420,095 randomly selected people. Estimate the probability of 135 or fewer cases of such cancers in a group of 420,095 people. What do these results suggest about media reports that cell phones cause cancer of the brain or nervous system.