1. Is a normal distribution a reasonable approximation for a binomial distribution with *n* = 50 and *p* = 0.85? Explain your reasoning.
2. Compute the mean and standard deviation of a binomial random variable with parameters *n* = 1000 and *p* = 0.5.
3. A really tough trivia quiz has 50 multiple-choice questions, each with four possible answers. Use a normal approximation to calculate the probability of randomly guessing the correct answers for at least half of the questions.
4. A really tough trivia quiz has 50 multiple-choice questions, each with four possible answers. Use a normal approximation to calculate the probability of randomly guessing the correct answers for 10 to 15 (inclusive) of the questions.