

1. According to Gallup, about 33% of Americans polled said they frequently experience stress in their daily lives. You want to know if this value is the same for residents of your city. Suppose you take a poll of 45 residents.
  - a. Assuming that the residents of your city do have the same stress rate as other Americans, describe the sampling distribution for the sample proportion (name the model and give its mean and standard deviation.
  - b. Do all necessary conditions appear to be met to use this model? Explain.
  - c. Draw and label this model according to the 68-95-99.7 rule.
  - d. If 20 residents in your sample said they frequently experience stress, would you be surprised? Explain.
  - e. Find the probability that no more than 12 residents in your sample will say that they frequently experience stress.
  
2. The average composite ACT score for Ohio students who took the test in 2003 was 21.4. Assume that the standard deviation is 1.05. In a random sample of 25 students who took the exam in 2003, what is the probability that the average composite ACT score is 22 or more? Make sure to check the necessary conditions. Remember that ACT scores are normally distributed.

3. Assessment records indicate that the value of homes in a small city is skewed right, with a mean of \$140,000 and a standard deviation of \$60,000. To check the accuracy of the assessment data, officials plan to conduct a detailed appraisal of 100 homes selected at random.
- Could you use the Normal model to find the probability that a randomly selected individual home costs more than \$150,000? Explain.
  - Could you use the Normal model to find the probability that the mean price of the officials' sample of 100 homes will be above \$150,000? Explain.
  - Find this probability.