Chapter 7 FRAPPY!
Student Sample Commentary

Sample #1
In part (a), the response stated that the distribution will be approximately normal and compared the sample size to a specific boundary (30). The response would be stronger if the numerical value of the sample size ($n = 50$) was included, but part (a) was still scored essentially correct (E). In part (b), the mean and standard deviation were calculated correctly and work was shown for the standard deviation calculation. Part (b) was scored essentially correct (E). In part (c), the student clearly identified the use of the normal distribution with correct parameters and boundary value. The probability is also correct, but the student used an incorrect symbol in the probability statement ($\mu_{\bar{x}}$ instead of $\bar{x}$). Because of this mistake, part (c) was scored partially correct (P). In part (d), the response included the first two steps (take many samples of size 50, find the median for each sample), but does not address the third step (calculating the standard deviation of the sample medians). Because the response only included two of the three components, part (d) was scored partially correct (P). With two parts essentially correct and two parts partially correct, the entire response was judged as substantial and earned a score of 3.

Sample #2
In part (a), the response stated that the distribution will be approximately normal because there were 50 people in the sample, but never compares 50 to a specific boundary value. Part (a) was scored partially correct (P). In part (b), the mean and standard deviation were calculated correctly, but no work was shown for the standard deviation calculation. Part (b) was scored partially correct (P). In part (c), the student calculated a *z*-score using the correct mean and boundary value, but an incorrect standard deviation. This is sufficient for component 2, but not component 1. Because the normal probability provided was consistent with components 1 and 2, part (c) was scored partially correct (P). In part (d), the response did not attempt to use a simulation nor include any of the three steps. Part (d) was scored incorrect (I). With three parts partially correct, the entire response was judged as minimal and earned a score of 1.