

Chapter 5 FRAPPY!

Student Sample Commentary

Sample #1

In part (a), the probability was calculated correctly and work was shown. Part (a) was scored essentially correct (E). In part (b), the response correctly identified two probabilities that should be the same if the events are independent: $P(F)$ and $P(F | C)$. These probabilities were calculated correctly and the events were determined to be not independent because the probabilities were not equal. Part (b) was scored essentially correct (E). In part (c), the assignment of digits was incorrect. Even though a student who completed the assignment has a $75/100 = 30/40$ chance of being chosen with the first selection, the conditional probability that a student who completed the assignment is chosen with the second selection is either $74/99$ or $75/99$, which do not equal $29/39$ or $30/39$. The response earned credit for the second and third component by correctly describing how to move through the table, ignoring repeats, and what to record at the end of each trial. Part (c) was scored partially correct (P). In part (d), the response used the table of random digits correctly based on the response in part (c) and the annotations were clear. However, the response doesn't indicate that the calculated probability is an estimate ("probability is 0"). Part (d) was scored partially correct (P). With two parts essentially correct and two parts partially correct, the entire answer was judged as substantial and earned a score of 3.

Sample #2

In part (a), the probability was calculated correctly but no work was shown. Part (a) was scored partially correct (P). In part (b), the response did not correctly identify two probabilities that should be the same if the events are independent. Part (b) was scored incorrect (I). In part (c), the assignment of digits was correct, however the response didn't address what to do with repeated labels or describe what to record at the end of each trial. Because the response only earned credit for the first component, part (c) was scored incorrect (I). In part (d), the response attempted to use the table of random digits, but the annotations were unclear. However, the response calculated a probability that was consistent with the simulation and clearly indicated that the calculated probability is an estimate ("approximately $1/3$ "). Part (d) was scored partially correct (P). With two parts partially correct, the entire answer was judged as minimal and earned a score of 1.