This quiz is designed to give you practice in an exam-like setting before our fourth midterm on Friday.

1. Suppose that a treat bag of 8 candy bars contains 2 Snickers and 6 Butterfingers. George gets to pick 3 candy bars from the bag. Find the probability that he picks 1 Snickers and 2 Butterfingers.

2. A poll asked the citizens of Townsville whether they had a positive or negative view of the mayor. 80% of the citizens selected "positive", and the other 20% selected "negative".
   
   (a) If 5 citizens of Townsville are randomly selected, what is the probability that 2 of them view the mayor negatively? Express your solution as a percentage, and round to the nearest percent.

   (b) If 15 citizens of Townsville are randomly selected, what is the probability that at least 13 of them will have a favorable view of the mayor? Express your solution as a percentage, and round to the nearest percent.
3. A contractor bids on a project. There is a probability of 72% that he can show a profit $40,000 and a probability of 38% that he will absorb a loss of $10,000. What is his mathematical expectation?

4. An ice cream store has two special flavors this month, butterscotch and cinnamon. Today 30% of customers ordered butterscotch ice cream, 20% ordered cinnamon ice cream, and 10% ordered both.
   (a) What is the probability that a (random) customer ordered one of the special flavors, butterscotch or cinnamon?

   (b) What is the probability that a (random) customer got cinnamon ice cream, given that they also got butterscotch ice cream?

   (c) Let the E be the event that a customer chooses butterscotch, and let F be the event that a customer chooses cinnamon. Are the events E and F dependent or independent? Support your solution.