Math 30530, Probability

Name:

1. 2% of all Rayovac AA batteries, and 5% of Duracell AA batteries are defective. One quarter of the AA batteries in my battery drawer are Rayovac. I take an AA battery from my drawer at random, and find it to be defective. How likely is it to have been a Rayovac?

2. (a) Let A, B, C be three events in a probability space. What is the definition of "the collection of events A, B, C is independent"?

   (b) I roll three balanced (fair) die — a four-sided one, with faces marked "1" through "4", a five-sided one, with faces marked "1" through "5", and a six-sided one, with faces marked "1" through "6". How likely am I to see the same number on each die?