Quiz on 7.4: Probably counting

1. Robert and Susan are in a group of 5 people who are to be seated randomly around a table. What is the probability that they are seated next to each other?

2. Alex, Betty, Carlos, Duane, Enid, Frank, and Gareth each have a birthday this year, and that birthday will fall on one of the days of the week: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday. What is the probability that 2 of the birthdays are on the same day of the week?

3. A box of 200 hair scrunchies contains 10 defective scrunchies.

(a) A customer buys 5 scrunchies from the box. What is the probability that they did not get any defective scrunchies?

(b) Another customer buys 5 more from the box. What is the probability that he did not get any defective scrunchies, assuming the first customer did not get any defective scrunchies?