

- 1) You roll two dice. The first die shows a ONE and the other die rolls under the table and you cannot see it. **Now**, what is the probability that both die show ONE?
- 2) You decide to tell your fortune by drawing two cards from a standard deck of 52 cards. What is the probability of drawing two cards of the same suite in a row? The cards are not replaced in the deck.
- 3) A new Superman MasterCard has been issued to 2000 customers. Of these customers, 1500 hold a Visa card, 500 hold an American Express card and 40 hold a Visa card and an American Express card.
 - a) Find the probability that a customer chosen at random holds a Visa card.
 - b) Find the probability that a customer chosen at random holds an American Express card.
- 4) Experience has shown that $1/200$ of all CDs produced by a certain machine are defective. If a quality control technician randomly tests a CD, compute each of the following probabilities:
 - $P(\text{this one is defective})$
 - $P(\text{this one is not defective})$
- 5) After studying a couple's family history, a doctor determines that the probability of any child born to this couple having a gene for disease X is 1 out of 4. If the couple has three children, what is the probability that only one of the children has the gene for disease X? (Draw a tree diagram.)
- 6) In the old days, there was a probability of 0.8 of success in any attempt to make a telephone call. (This often depended on the importance of the person making the call, or the operator's curiosity!) Calculate the probability of having at least 2 successes in 3 attempts.
- 7) Suppose a bag contains 3 red blocks, 6 blue blocks, and 2 yellow blocks.
 - a. What is the probability of drawing one red block, replacing it, then drawing another red block?
 - b. What is the probability of drawing one blue block, not replacing, and then drawing a yellow block?