

1. Create a tree diagram to show all possible outcomes after five coin flips.
2. If two dice are thrown, what is the probability of getting a sum of 6?
3. In how many ways can the offices of president, secretary and treasurer be filled from a group of twelve people?
4. In how many ways can 10 questions out of 14 be chosen on an examination?
5. There are 6 freshmen, 3 sophomores, 2 juniors, and 5 seniors to choose from to form a committee. How many ways can someone choose 2 from each class for the committee?
6. In a drawer are 4 white gloves, 7 black gloves, and 9 brown gloves. If a glove is picked at random, what is the probability that it will be either white or brown?

AFM Assessment #1 – Probability

7. The probability that Toni will solve a certain problem is $\frac{2}{3}$, that Javier will solve it is $\frac{4}{5}$, and that Lindsey will solve it is $\frac{1}{4}$, what is the probability that Toni and Javier will solve it, and Lindsey will not solve it?
- 8-9. Suppose you are drawing a card from a standard deck of 52 cards and choosing an ace or a queen. Are the events mutually exclusive? What is the probability of drawing an ace or a queen?
- 10-11. A pair of 6-sided dice are rolled. The event is doubles or sum of 8. Are the events mutually exclusive (justify your answer)? What is the probability of doubles or sum of 8?
12. If you have a 60% chance of making a free throw, what is the probability of missing the free throw?
13. A card is drawn from a standard deck of 52 cards, replaced, and a second card is drawn. What is the probability that both cards are nine?
14. A card is drawn from a standard deck of 52 cards and a second card is drawn without replacement. What is the probability that the first card is a jack and the second card is a five?
15. There is a lottery of 2000 tickets; every ticket costs \$4. The lottery has the following prizes: one ticket wins \$600, 20 tickets win \$1000 and 40 tickets win a \$20 prize. What is the expected value?