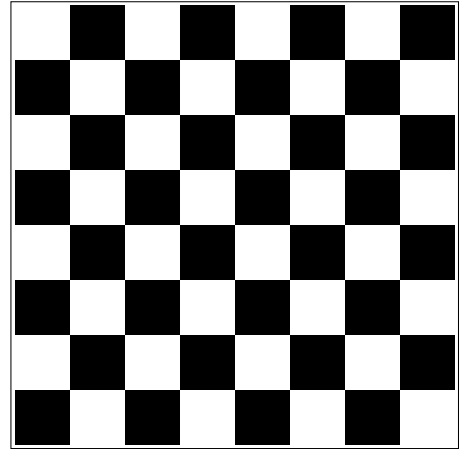
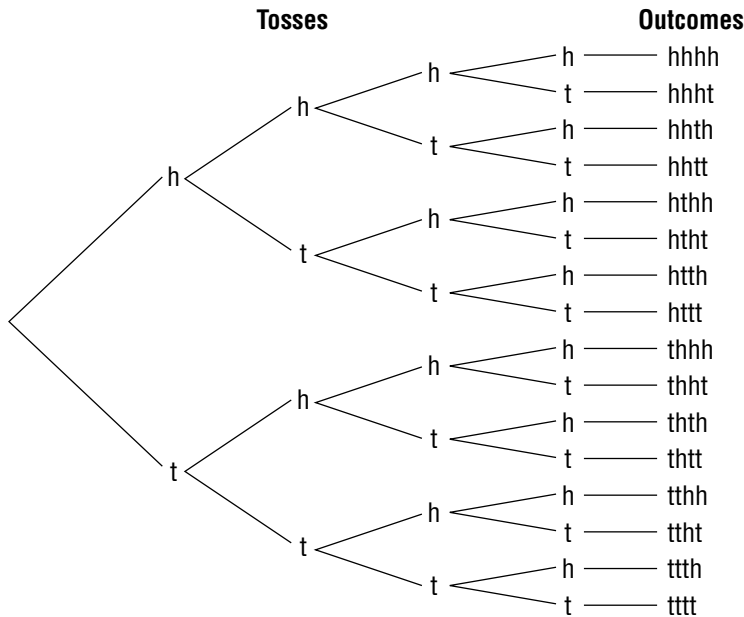


Real-Life Career Activity

Board Game Designer

Board game designers often use tree diagrams to help them decide how to write rules for a game. In this activity, a game designer is making rules for a coin toss game with four coins.

In this tree diagram, h is heads and t is tails.



Suppose the designer plans to write a rule that says a player wins 5 points if he or she tosses four heads or four tails. Find the probability that a player wins the 5 points. There are 2 ways to toss four heads or four tails. There are 16 possible ways to toss four coins. The probability that a player gets 5 points is $\frac{2}{16}$ or $\frac{1}{8}$.

Solve.

- The designer writes that a player wins 2 points if he or she tosses two heads and two tails. Find the probability that a player gets 2 points.
- The designer writes that a player wins 1 point if he or she tosses three of one side and one of another. Find the probability that a player gets 1 point.
- For what outcome, if any, would a player win no points?