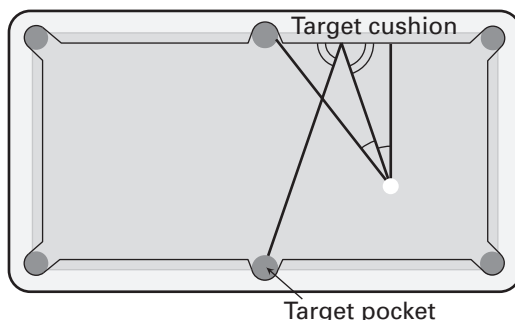


Real-Life Application: When Will I Ever Use This?

For use with pages 34–42

Billiards

When playing billiards, one of the most difficult skills to master is the bank shot. In this shot, you do not shoot directly at a pocket, but rather you ricochet the ball off of a cushion, or a side of the table, so that it goes into a pocket. Using angle bisectors, you can determine the target point on the cushion. In the diagram below, there is a ball that you wish to bank into the side pocket. In your mind, draw a perpendicular line from the ball to the bank. Next draw a line to the side pocket opposite the target pocket. If you can find the bisector of the angle for which the ball is the vertex, follow that bisector to the cushion. That is the spot to hit. The ball will bounce off of the cushion at the same angle that it approached it and ultimately go into the side pocket.



In Exercises 1–4, use the information above.

1. Show how to bank the gray ball in the diagram at the right off of target cushion 1 into target pocket 1. Bisect the angle by sight.
2. Bisect the angle again by using a compass. Was your guess close? Draw the path of the ball using a ruler and estimating the angle of reflection to see if you would make the shot.
3. Repeat the process in Exercises 1 and 2 to the same ball off of target cushion 2 into target pocket 2.
4. Is it possible to make the shot in Exercise 3? Explain.

