

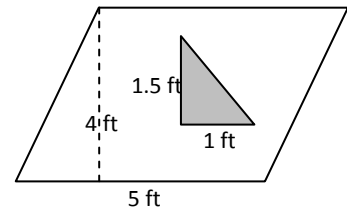
The Story: Franky Flores wanted to raise money for his favorite charity. So, he created a series of games. The games involve throwing darts onto boards. If a dart lands within a shaded figure, it is considered a win.

Calculating the Probability of a Win: To calculate the probability of winning, a ratio has to be determined. The numerator of the ratio is the area of the shaded figure. The denominator is the total area of the board.

$$\text{Probability of Success} = \frac{\text{area of the shaded figure}}{\text{area of the board}}$$

Example:

If the board is shaped like the parallelogram to the right and it has a triangular-shaped shaded figure, we can calculate the probability of success for this game.



The area of the triangle is $(1.5 \text{ ft})(1 \text{ ft})/2 = 0.75 \text{ ft}^2$.
The area of the parallelogram is $(4 \text{ ft})(5 \text{ ft}) = 20 \text{ ft}^2$.

The probability of success is $0.75 \text{ ft}^2/20 \text{ ft}^2 = 0.0375$ or 3.75%.

Assignment: Calculate the probability of success (as a percent) for each game. Work must be shown. Then, do the problems on the back of this sheet.

<p>Game 1</p>	<p>Game 2</p>	<p>Game 3</p>	<p>Game 4</p>
<p>Game 5</p>		<p>Game 6</p> <p>All the triangles are congruent.</p>	<p>Game 7</p>

A) Arrange all of the games from the game with the best chance of success to the least chance of success.

Game	Chance of Success

B) There is a quick method to arrive at the ratio of success for Game 6. Explain how that quick method can be obtained.

C) Consider a new game. Call the new game, Game 8. Game 8 is like Game 2 but it has two shaded circles instead of one shaded circle. Make a diagram of Game 8 and calculate the chance of winning Game 8.

D) Consider a new game. Call the new game, Game 9. Design it so that the probability of success is less than 25% but greater than 15%. The game has to contain at least one circle and two other shapes. Make sure the dimensions are clearly labeled within a diagram.