

Lesson Four: Odds

Another way to express probability is to state the "odds in favour of" or the "odds against" an event occurring.

When determining **favourable odds (for)**, we compare the number of ways the event can occur versus the number of ways the event **cannot** occur.

$$\text{Odds in favour} = \text{Number of successes} : \text{Number of failures}$$

When determining **unfavourable odds (against)**, we compare the number of ways the event cannot occur versus the number of ways the event can occur.

$$\text{Odds against} = \text{Number of failures} : \text{Number of successes}$$

Odds are just another way of expressing probability. Probability can be thought of as the number of "successful" outcomes divided by total number of outcomes while odds are number of successes versus number of failures.

$$\text{Probability} = \frac{\text{Part}}{\text{Whole}}$$

$$\text{Odds} = \text{Part} : \text{Part}$$

ODDS

FOR : # AGAINST

OR

TOTAL FAVOUR : NOT FAVOUR

Example 1

A jewelry box contains 5 white pearls, 2 gold rings and 6 silver rings. State the odds of drawing a white pearl from the jewelry box.

ODDS
 WHITE PEARLS : NOT white Pearls
 5 : 8
 The odds are 5 to 8.

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Example 2

In a bag there are 3 red marbles and 4 green marbles. You pull one marble out of the bag. State the **odds** that the marble you chose is green.

GREEN : NOT GREEN
 4 : 3