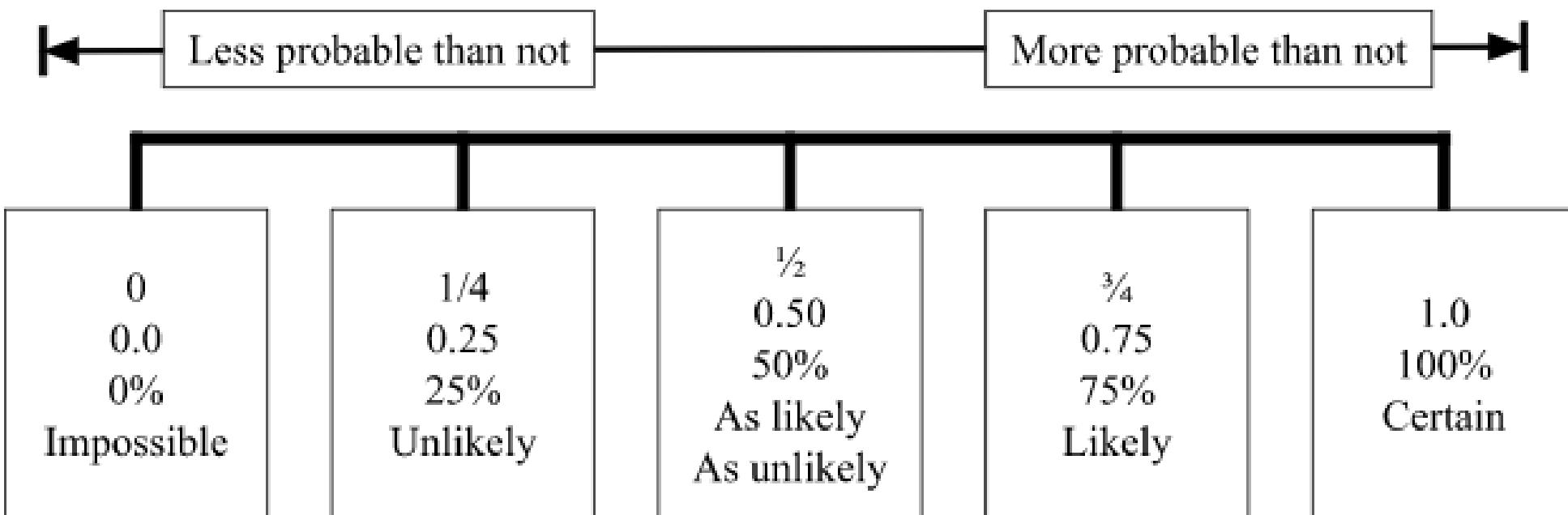


PROBABILITY

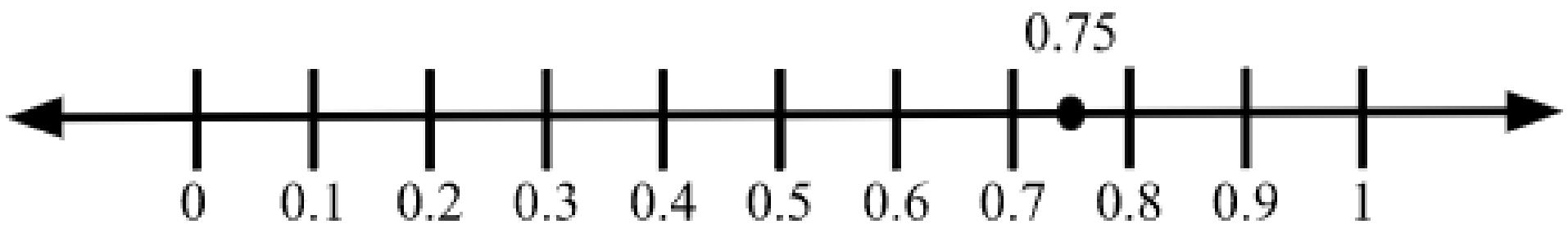
Probability is the measure of how likely it is that an event will occur. While the future cannot be predicted with certainty, probability helps us make reasonable assumptions about future events based on their likelihood.

Probability can be expressed as a **fraction**, **decimal**, or **percentage**, with values ranging **from 0 to 1**. A probability of **0** indicates an **event is impossible**, while a probability of **1** signifies an **event is certain**.



The weather forecaster predicts a 75% chance of rain today. Does it mean that there is a great chance that it will rain today?

To answer this question, we need to understand the concept of probability. Based on the forecast, the probability of rain today is 75% or 0.75 on a scale from 0 to 1. Refer to the number line below for context. $75\% = 0.75$



We can say that rain is likely to occur today because, according to the number line, 0.75 or 75% is closer to 1 (100%).

Study the following
examples.

Example 1:

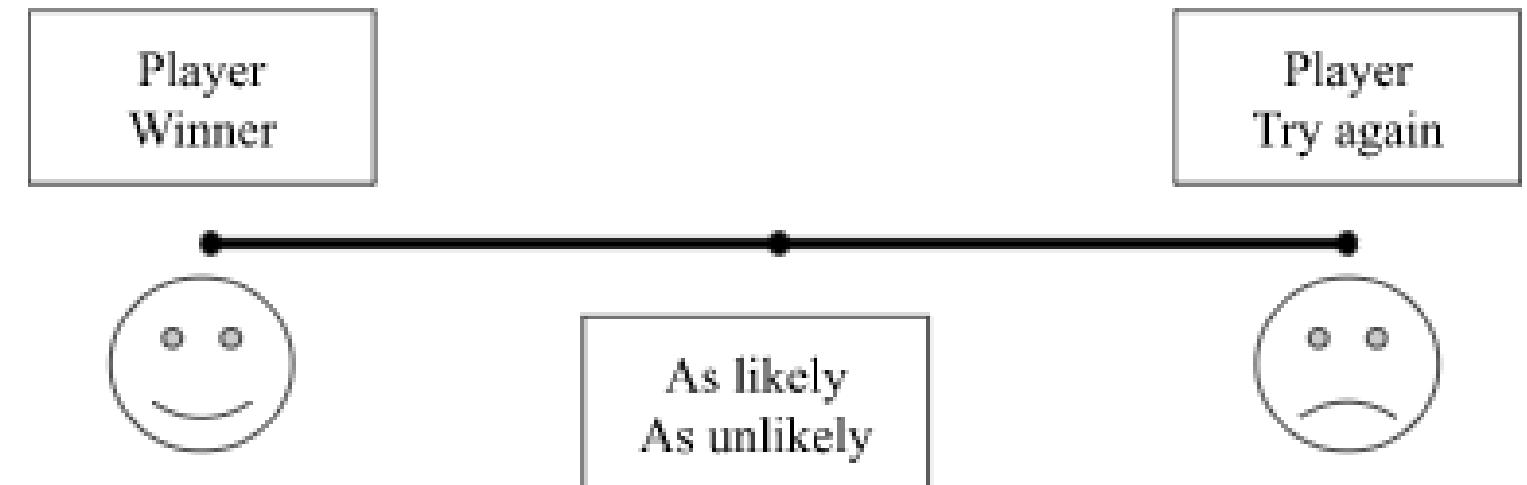
Use the terms impossible, most unlikely, unlikely, likely, most likely, and certain to describe the probability or likelihood of each of the following statements.

Here's a new set of questions using the same context:

1. It will snow tomorrow.
 - Since the Philippines is a tropical country, it is impossible for snow to occur under normal weather conditions.
2. The chance of drawing the ace of spades from a deck of 52 cards is 2%.
 - Since 2% is very close to 0%, it is most unlikely to draw the ace of spades.
3. There is a 50% chance of flipping heads in a coin toss.
 - A 50% probability means the chance of flipping heads is as likely as it is unlikely.
4. A survey shows there is an 80% chance of rain this afternoon.
 - With an 80% probability, it is most likely that it will rain this afternoon.
5. The earth will rotate on its axis tomorrow.
 - Since this happens every day, it is certain to occur.

Example 2:

In a raffle, one ticket is drawn from a box containing two tickets: one marked "Winner" and the other marked "Try Again." The chance of drawing the "Winner" ticket is 50%. This means there is an equal chance of drawing either ticket.



Example 3:

There are 10 cue balls numbered 1 to 10. Without looking, what is the likelihood of shooting a number 7 cue ball to the pocket?

There are a total of 10 cue balls in the billiard pool. This is represented as the denominator, The numerator tells us how many cue ball number 7 which is total of 1. The chance of shooting in pocket the cue ball number 7 is $1/10$ (1 out of 10) or 10% So, it is impossible to shoot the cue ball number 7 to the pocket.

