Multiplication Rule in Probability

Today's Standard

HSS.CP.B8 - (+) Apply the general Multiplication Rule in a uniform probability model, P(A and B) = P(A)P(B|A) = P(B)P(A|B), and interpret the answer in terms of the model.

Cues	Notes
What is the Multiplication Rule?	The Multiplication Rule helps calculate the probability of two events happening together.
How do you calculate P(A and B)?	P(A and B) = P(A)P(B|A) = P(B)P(A|B).
What is conditional probability?	Conditional probability is the likelihood of an event occurring given that another event has already occurred.
What is the difference between independent and dependent events?	Independent events do not affect each other's outcomes, while dependent events do.
Give an example of a real-world application of the Multiplication Rule.	Examples include predicting genetic outcomes, assessing risk in insurance, and determining reliability in engineering.

Summary

The Multiplication Rule in probability is used to determine the likelihood of two events occurring together, taking into account whether the events are independent or dependent. Understanding this rule is essential for solving complex probability problems and has various real-world applications.