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When we speak of the probability of some event, we are talking about a measure of how likely it is that the event will occur.

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- The price of a stock goes above \$20
- A storm produces more than a foot of snow

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Unlike areas of mathematics like plane geometry where the ancients got it right, the ideas relating to probability were invariably wrong until fairly recently.

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Although Kolmogorov is not mentioned, the *Rules of Probabilities* in section 5.1 of the text are taken from the Kolmogorov axioms.

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As scientific knowledge grew, particularly in early 20th century physics, it became obvious that a mathematical theory of probability was important, even central to understanding certain physical phenomena.

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Times and attitudes have changed.

Stephen Hawking, one of today's most prominent and accomplished physicists, said "Not only does God play dice with the universe, but He sometimes throws the dice where we can't see them".

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An *event* is defined as any collection of outcomes, that is, any subset of the sample space.