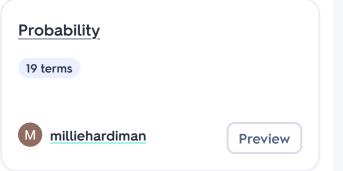
Probability - STAT110 Otago

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Terms in this set (18)

subjective probability	the individual's personal estimate of the chance of loss probability as the degree of belief i n a statement
Objective Probability	the long-run relative frequency of an event based on the assumptions of an infinite number of observations and of no change in the underlying conditions
Experiment definition	an experiment is a process by which observations/ measurements are obtained, e.g.: throwing a fair die,
Event definition	An event is the outcome of an experiment, e.g.: - getting a 6
sample space definition	The sample space is the set of all possible outcomes of an experiment, e.g.: - in the case of a fair die, {1, 2, 3, 4, 5, 6}.
Complementary events	$Pr(A) + Pr(\bar{A}) = 1$
Mutually Exclusive Events	There is no intersection between the two events $Pr(A \text{ and } B) = Pr(A \cap B) = 0$ e.g., Māori and Chinese

Conditional Probability Multiplication Rule	$Pr(A \text{ and } B) = Pr(A \cap B) = Pr(A) Pr(B A)$
Conditional Probability Addition Rule	$Pr(A \text{ or } B) = Pr(A \cup B) = Pr(A) + Pr(B) - Pr(A \cap B)$
Independent Events	The outcome of one event does not affect the outcome of the second event
independence check (true if)	Pr(B) ≠ Pr(B A) or Pr(A) ≠ Pr(A B)
definitions of <i>Diagnostic</i> tests	Sensitivity Specificity False positive fraction Positive Predictive Value Negative Predictive Value
Sensitivity (Diagnostic tests)	Pr(B A) The probability that a person with the disease has a positive test Think of this as "the probability of a positive test result, given the person actually has the disease. A: some condition (A) is present. B: the related test (B) for the presence of A is positive.
Specificity (Diagnostic tests)	Pr(-B -A) The probability that a person without the disease has a negative test Think of this as "the probability of a negative test result, given the person does NOT have the disease. A: some condition (A) is present. B: the related test (B) for the presence of A is positive.

Negative Predictive Value	Pr(-A I-B) The proportion of patients with negative test results who don't have the disease. The proportion of patients with negative test results who are correctly diagnosed.
	A: some condition (A) is present. B: the related test (B) for the presence of A is positive.
False positive fraction (Diagnostic tests)	 1 - specificity = Pr(-B -A). A: some condition (A) is present. B: the related test (B) for the presence of A is positive.
Positive Predictive Value	Pr(A B) The proportion of patients with positive test results who have the disease. The proportion of patients with positive test results who are correctly diagnosed. A: some condition (A) is present. B: the related test (B) for the presence of A is positive.
Negative Predictive Value	Pr(-AI-B)