The first interpretation of a derivative is rate of change. This was not the first problem that we looked at in the limit chapter, but it is the most important interpretation of the derivative. If represents a quantity at any x then the derivative represents the instantaneous rate of change of at .

PMF – Probability Mass Functions

**probability mass function** (**pmf**) is a function that gives the probability that a [discrete](https://en.wikipedia.org/wiki/Discrete_random_variable) [random variable](https://en.wikipedia.org/wiki/Random_variable) is exactly equal to some value.[[1]](https://en.wikipedia.org/wiki/Probability_mass_function#cite_note-1) The probability mass function is often the primary means of defining a [discrete probability distribution](https://en.wikipedia.org/wiki/Discrete_probability_distribution), and such functions exist for either [scalar](https://en.wikipedia.org/wiki/Scalar_variable) or [multivariate random variables](https://en.wikipedia.org/wiki/Multivariate_random_variable) whose [domain](https://en.wikipedia.org/wiki/Domain_of_a_function) is discrete.