# SD - Continuous random variables

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| **What two conditions must hold true for all pdfs (probability density functions)?** |  |
| **How can you find the mode of a CRV?** | 1. Differentiate the **PROBABILITY DENSITY FUNCTION** 2. Find where it equals 0.   *While the probability of getting this exact value is negligible, a lot of values will occur around here.* |
| **What is the Var(g(x)) and E(g(x)) of a CRV?** | *Essentially, it’s each value multiplied by its probability of occurring.*  **Example:** |
| **What is a cdf (cumulative distribution function)?** | *This is useful for finding medians and quartiles (e.g., F(x) = 0.5).* |
| **What is a continuous uniform distribution / rectangular distribution?** | The area is (b - a)h = 1 so h = 1/(b-a). |
| **What is the mean of a discrete uniform distribution and its derivation?** |  |
| **What is the variance of a discrete uniform distribution and its derivation?** |  |