

□ Idealization:

- Density curve = idealization = μ
 - Not thinking of real data
 - Intuition of \bar{x} and is the center of center we think?

Variance of a random variable:

Correlation:

- Two random variables and how they relate.
- Idealization of r

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□ Independence:

- One random variable does not relate to another random variable
- Stronger form of uncorrelatedness
- If correlation = 0 then the variables have no relation and are independent. Intuition is important here.

To find the stabilization of the second random variables:

- Variable minus the mean of the first random variables stabilization aka mean and then square it. Multiply that by the probability of that second random variables and add them all up.

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□ Extending our intuition from describing histograms to a probability distribution. DO THIS. Understand how shape center mean apply to probability distributions.

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□ adding two random variables combines them. Could be correlated or not. Could be negatively correlated or not. How do you add negative correlations!?

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□ Linear transformation of a single random variables:

- Changing units of Celsius to Fahrenheit. $C = \frac{5}{9}F - \frac{160}{9}$
- These are very common in the real world and are easy to set up with a set of rules.

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Rules: Linear transformation of a single random variable

- $Y=5/9X-160/9$
- $Y= a+bx$
- $5/9=B$
- $A=-160/9$
- $A = y$ intercept..?
- Example on collab, look at asap

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