

Midterm Debriefing

A random variable is not its expectation.
 Wrong to say $Y = 5X$ on HW's, #2.
 $E[Y] = 5E[X]$

Y is the sum of 5 ind deals

X is one random deal

A random variable is characterized by its PMF or PDF.

Ex: 1. Roll of a fair 6-sided die.

2. # heads when you flip a fair coin 7 times independently.

Expectation is 3.5 for both examples.

$$P(\mu - \sigma < Z < \mu + \sigma) = P\left(-1 < \frac{Z - \mu}{\sigma} < +1\right)$$

$$= \Phi(1) - \Phi(-1)$$