

1. What is your name?
2. Prior to today's meeting, we've primarily focused on the probabilities of events w/r sample spaces. But now we're also focusing on the probabilities of random variables w/r sample spaces. Clearly random variables are dependent on events but how are the two different? For ready reference, the two definitions are copied below. After studying them again, write a paragraph that explains how random variables differ from events.

Sample paragraph:

Many decades ago when I was first confronted with the phrase "random variables," I thought a random variable must be a collection of randomly selected elements and that is more akin to randomly selected events. But shortly thereafter, I change my impression that a random variable was not just any flavor of elements from a set but the elements must be real numbers. So maybe random variables unlike events that are not necessarily numbers, a random variable is an unspecified member of a set of randomly chosen numbers. And that turns out to be close to an accurate concept of *random variable*. But since then, I've refined my concept so that now I think that, like an *event*, a random variable is a set but, unlike an event, a random variable is a special kind of set, namely a function that maps events to real numbers. But we need to keep in mind that a random variable is not a probability function although similar to a probability function it associates events to real numbers. The major benefit of supplanting the  $\{ \text{events} \}$  with a random variable for the domains of probability functions is that it provides us with a convenient notation for experiments that are highly complex.

38. Definition for *discrete random variable* :  $X \in \{ \text{discrete random variables of } \Omega \} \Leftrightarrow (|\Omega|, |X| \in \{ \aleph_0, 0, 1, 2, 3, \dots \} \wedge E = \{ \text{events of } \Omega \} \wedge X: E \rightarrow \mathbb{R})$

029E. Definition for *event*:  $A \in \{ \text{events of } \Omega \} \Leftrightarrow A \subseteq \Omega$

3. Smile.

