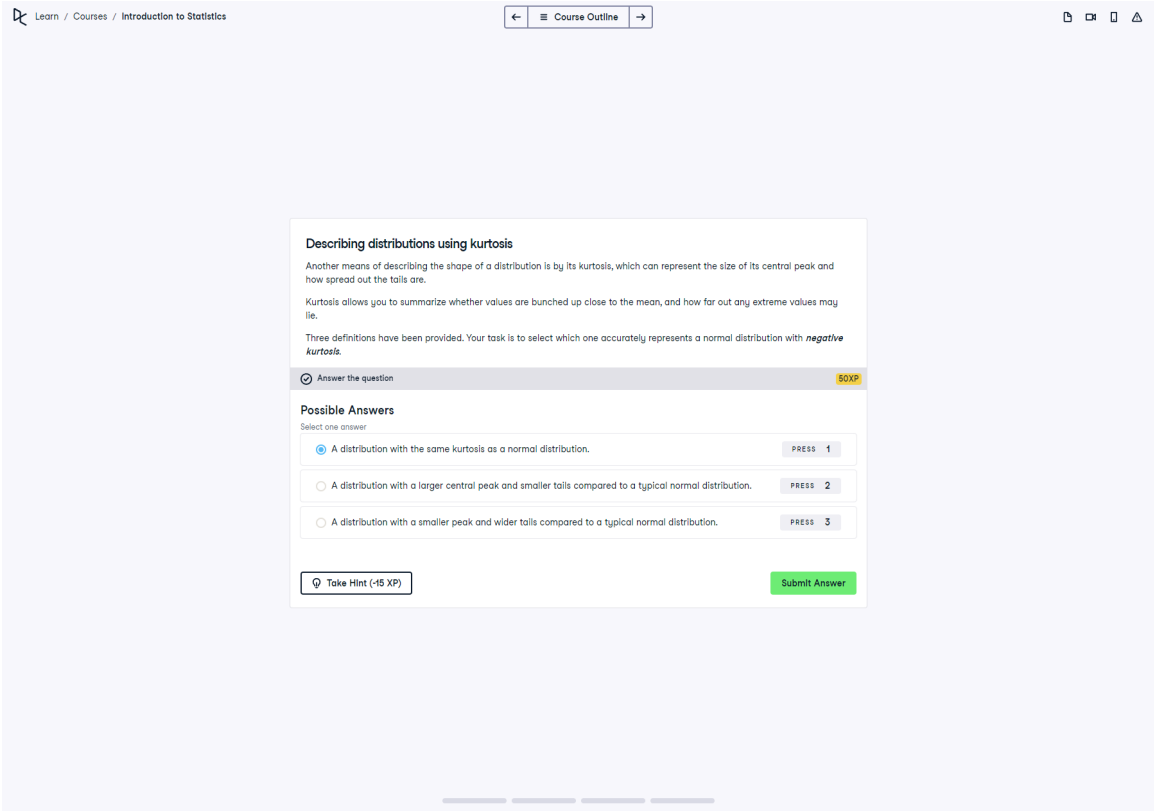
Describing Distributions Using Kurtosis

Another means of describing the shape of a distribution is by its kurtosis, which can represent the size of its central peak and how spread out the tails are.

Kurtosis allows you to summarize whether values are bunched up close to the mean, and how far out any extreme values may lie.

Three definitions have been provided. Your task is to select which one accurately represents a normal distribution with negative kurtosis.



Answer

Answer: A distribution with a smaller peak and wider tails compared to a typical normal distribution.
Explanation: Negative kurtosis represents platykurtic distributions, which have a flatter peak and wider, less pronounced tails compared to a normal distribution. This contrasts with positive kurtosis (leptokurtic distributions) that have a sharper peak and thinner tails.

Explanation of the Answer

To determine the correct representation of negative kurtosis:

1. **Kurtosis** describes the shape of the distribution's tails and peak:
- **Platykurtic (Negative Kurtosis)**: Flatter peak and wider tails compared to a normal distribution.
- **Leptokurtic (Positive Kurtosis)**: Sharper peak and thinner tails.
- **Mesokurtic**: Matches a normal distribution with no excess kurtosis.

2. The correct choice describes a platykurtic distribution, which has a smaller peak and wider tails compared to a normal distribution. This matches the properties of a normal distribution with negative kurtosis.