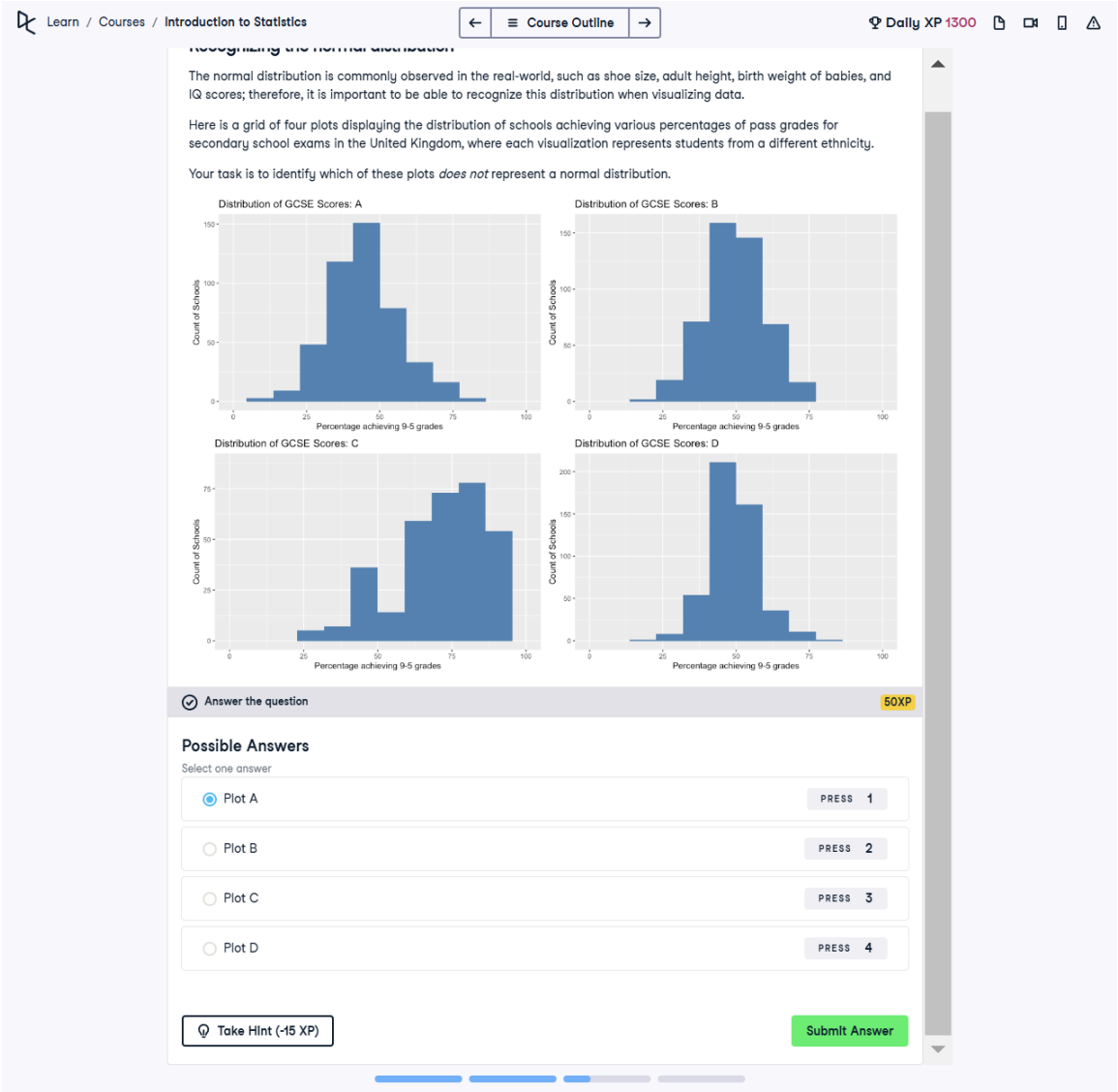
Recognizing a Normal Distribution

The normal distribution is commonly observed in the real-world, such as shoe size, adult height, birth weight of babies, and IQ scores; therefore, it is important to be able to recognize this distribution when visualizing data.

Here is a grid of four plots displaying the distribution of schools achieving various percentages of pass grades for secondary school exams in the United Kingdom, where each visualization represents students from a different ethnicity.

Your task is to identify which of these plots does NOT represent a normal distribution.



Answer

Answer: Plot C
Explanation: A normal distribution is symmetric and bell-shaped, with a single peak at the mean and tails that taper off on both sides. Plot C does not follow this pattern as it is skewed to the right, indicating it does not represent a normal distribution. Plots A, B, and D are symmetric and resemble normal distributions.

Explanation of the Answer

To identify whether a plot represents a normal distribution:

1. Look for symmetry around the center: Normal distributions are symmetric with data evenly distributed around the mean.
2. Check for a single peak (unimodal): Normal distributions have one peak at the mean.
3. Verify if the tails taper off smoothly without abrupt changes.

Analysis of the plots:
- **Plot A**: Symmetric and bell-shaped, follows a normal distribution.
- **Plot B**: Symmetric and bell-shaped, follows a normal distribution.
- **Plot C**: Skewed to the right, not symmetric, does not follow a normal distribution.
- **Plot D**: Symmetric and bell-shaped, follows a normal distribution.

Therefore, Plot C does not represent a normal distribution.