### Explanation

The formula for detecting outliers is:

Outlier Range=Q1−1.5×IQR

The reasoning behind multiplying the IQR by 1.5 is rooted in empirical data and statistical conventions. This factor is considered an appropriate balance that identifies outliers without being too strict or too lenient. Here's why:

1. **Sensitivity Balance**: Multiplying by 1.5 provides a balance that is sensitive enough to identify significant outliers without marking too many points as outliers. It's an empirical choice based on historical data analyses.
2. **Spread Representation**: The value of 1.5 times the IQR adequately represents a spread that captures points significantly distant from the central 50% of the data. It accounts for a reasonable extension of the data's range.
3. **Practical Use**: In practical terms, using 1.5 times the IQR is a widely accepted and straightforward method in various fields, making it convenient for consistent application across different datasets.

If a data point falls below Q1−1.5×IQR or above Q3+1.5×IQR it is considered an outlier.

**Why Use 1.5?**

Empirical studies have shown that this factor effectively balances the identification of outliers across different types of distributions. It's not too restrictive to miss outliers but not too loose to include non-outliers.