

Outlier Effect Answer Key

1. Yes. The outlier is far from the pattern and at an extreme x-value, so it can strongly pull the fitted line.
2. No. The outlier is far from the pattern but near the middle of the x-values, so it has less effect on the line's overall slope.
3. No. The outlier is near the middle of the x-values. Removing it would not substantially change the overall positive trend.
4. Yes. The outlier is at an extreme x-value and far from the negative pattern, so it can substantially affect the fitted line.

Teacher's Guide

- Have students identify the overall pattern before focusing on the unusual point.
- Emphasize that an outlier's effect depends on its location, not only its distance from the other points.
- For extra support, ask students whether each outlier is near the middle or an extreme end of the x-values.
- For a challenge, have students sketch an approximate best-fit line before and after removing each outlier.
- Increase engagement by having students predict which outliers will "pull" the fitted line most strongly.
- Extend the activity by asking students to explain why an outlier at an extreme x-value can have greater influence than one near the center.