

Push Tasks Answers



1. Points trend upward overall but scatter widely around any fitted line — strength measures closeness to the pattern, not direction, so wide scatter around a real trend is still weak.

2. “Trend” is the wrong word here — association should be negative. “Strong” alone doesn’t say linear or non-linear; a full description needs all three parts.

3. Example: plant growth vs. sunlight, curving up then levelling off (non-linear, positive, moderate). One plant in poor soil grew far less (outlier). Two species give two groupings.

4. Trend: non-linear. Association: positive. Relationship: strong overall. Scatter: roughly constant. Outlier: the point at (3, 35). Grouping: none visible.

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5. A single extreme outlier can make a strong association look weaker (if it opposes the trend) or artificially stronger (if it extends the pattern) — judge strength from the main cluster, reporting the outlier separately.

6. If the data comes from two populations (e.g. two age groups), each with its own relationship, plotting them together can create two clusters — the unplotted category is the hidden variable.

7. A strong linear relationship lets you extend a straight line to predict values a little beyond the data. A strong non-linear relationship can only predict reliably within (or very close to) the observed range.

8. The relationship becomes less predictable for larger x — the variables are closely linked for $x < 5$, but for $x > 5$ other factors increasingly affect y , making outcomes harder to predict from x alone.