Learning Tip:

Precise Communication in Math

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Precise Communication in Math

Consider the following statements:

1. “Study finds that a person checks their phone every 30 seconds.”
   - Likely intended meaning: An average person checks their phone about once every 30 seconds.
2. “Study finds that a car gets stolen every 30 seconds.”
   - Likely intended meaning: Every 30 seconds, there is a car which gets stolen.

See how the same sentence structure can be parsed in two different ways?

Precise Communication in Math

- In daily English, when a given statement has multiple interpretations, we can usually tell what the intended meaning is from the context.
- In Mathematics, we don't always have the luxury of context. For example,
  - $\sin x \cos x$ can mean $\sin(x) \cdot \cos(x)$ or $\sin(x \cdot \cos(x))$;
  - $\frac{d}{dx} x^2 + x^3$ can mean $\left(\frac{d}{dx} x^2\right) + x^3$ or $\frac{d}{dx}\left(x^2 + x^3\right)$.
- This is why precision is crucial in communicating math:
  - As authors, we aim to anticipate possible ambiguities and avoid them.
  - As readers, we parse mathematics presented to us carefully, and interpret it based on the agreed-upon definitions and notation.