Corollary to a Theorem

Examples & Non-Examples

✔ Example	✔ Example	✖ Non-Example
Theorem: The sum of the angles in a triangle is $180°$. **Corollary**: Each angle of an equilateral triangle measures $60°$.	**Theorem:** Vertical angles are congruent. **Corollary:** If one angle measures $65°$, then its vertical angle also measures $65°$.	**Theorem:** Vertical angles are congruent. **Non-example:** Adjacent angles that form a straight line are supplementary. Although this is true, it doesn't follow from the theorem about vertical angles—it comes from a different theorem or postulate.

Definition

Corollary to a Theorem: A corollary is a statement that follows directly from a previously proven theorem and can be proved with little or no additional work.

Key points:

- A corollary is usually a “bonus” result that comes from a theorem.
- It is considered true because the theorem it follows has already been proven.
- Often, corollaries simplify or extend the application of a theorem.

Example:

Theorem: The sum of the angles in a triangle is $180°$.

Corollary: Each angle of an equilateral triangle measures $60°$.

Why it’s a corollary:

- Once the theorem about the sum of angles is proven, it immediately follows that if all three angles are equal (equilateral triangle), each must be $180° \div 3 = 60°$.
- Very little additional proof is needed beyond the original theorem.