

Geometry Definitions



Ordinary Level

A **theorem** is a statement deduced from the axioms by logical argument.

A **proof** is a series of logical steps which we use to prove a theorem.

An **axiom** is a statement accepted without proof, as a basis for argument.

A **corollary** is a statement that follows readily from a previous theorem. Often a corollary is a statement of a theorem in a more specific context.

The **converse** of a theorem is the reverse of a theorem.

Example: In an isosceles triangles the angles opposite the equal sides are equal.

Converse: If two angles are equal in a triangle then the triangle is isosceles. Converse is true.

Implies is a term we use in a proof when we can write down a fact we have proved from our previous statements. The symbol for implies is \Rightarrow

Higher Level

Is equivalent to means something has the same value or measure as, or corresponds to, something else. For example \$3 is equivalent to €2.

If and only if: I will give you €100 if and only if you eat this apple. This means that if you eat this apple I'll give you €100 and if I have given you €100 you have eaten the apple.

Proof by Contradiction is where we cannot directly prove a statement but we can prove that the opposite statement is false.