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induction axiom

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Synonym	IND
Synonym	-IND
Synonym	axiom of induction

An induction axiom specifies that a theory includes induction, possibly restricted to specific formulas. IND is the general axiom of induction:

$$\phi(0) \wedge \forall x(\phi(x) \rightarrow \phi(x+1)) \rightarrow \forall x\phi(x) \text{ for any formula } \phi$$

If  $\phi$  is restricted to some family of formulas  $F$  then the axiom is called F-IND, or F induction. For example the axiom  $\Sigma_1^0$ -IND is:

$$\phi(0) \wedge \forall x(\phi(x) \rightarrow \phi(x+1)) \rightarrow \forall x\phi(x) \text{ where } \phi \text{ is } \Sigma_1^0$$