What is Universal Instantiation and Existential Instantiation? Explain in detail.

In [predicate logic](https://en.wikipedia.org/wiki/Predicate_logic) **universal instantiation** (**UI**, also called **universal specification** or **universal elimination**, and sometimes confused with [Dictum de omni](https://en.wikipedia.org/wiki/Dictum_de_omni_et_nullo)) is a [valid](https://en.wikipedia.org/wiki/Validity) [rule of inference](https://en.wikipedia.org/wiki/Rule_of_inference) from a truth about each member of a class of individuals to the truth about a particular individual of that class. It is generally given as a [quantification rule](https://en.wikipedia.org/w/index.php?title=Quantification_rule&action=edit&redlink=1) for the [universal quantifier](https://en.wikipedia.org/wiki/Universal_quantifier) but it can also be encoded in an [axiom](https://en.wikipedia.org/wiki/Axiom). It is one of the basic principles used in [quantification theory](https://en.wikipedia.org/wiki/Quantification_theory).

**Universal Instantiation** and [Existential generalization](https://en.wikipedia.org/wiki/Existential_generalization) are two aspects of a single principle, for instead of saying that "∀*x* *x*=*x*" implies "Socrates=Socrates", we could as well say that the denial "Socrates≠Socrates" implies "∃*x* *x*≠*x*". The principle embodied in these two operations is the link between [quantifications](https://en.wikipedia.org/wiki/Quantification_(logic)) and the singular statements that are related to them as instances. Yet it is a principle only by courtesy. It holds only in the case where a term names and, furthermore, occurs [referentially](https://en.wikipedia.org/wiki/Reference#Semantics)

In [predicate logic](https://en.wikipedia.org/wiki/Predicate_logic), **existential instantiation** (also called **existential elimination**) is a [valid](https://en.wikipedia.org/wiki/Validity) [rule of inference](https://en.wikipedia.org/wiki/Rule_of_inference) which says that, given a formula of the form {\displaystyle (\exists x)\phi (x)}, one may infer {\displaystyle \phi (c)} for a new constant or variable symbol *c*. The rule has the restriction that the constant or variable *c* introduced by the rule must be a new term that has not occurred earlier in the proof.