

VIVEKANANDA COLLEGE
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NAAC ACCREDITED 'A' GRADE



Topic: Traditional Subject-Predicate Propositions

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Quantification Theory: Traditional Subject-Predicate Propositions

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Traditional Subject-Predicate Propositions:

There are four types of propositions.

- All humans are mortal. (Universal Affirmative:A)
- No humans are mortal. (Universal Negative:E)
- Some humans are mortal. (Particular Affirmative:I)
- Some humans are not mortal. (Particular Negative:O)

Quantification of A Proposition:

All humans are mortal. (A)

If anything is a human, then it is mortal.

For any given thing x , if x is a human, then x is mortal.

Given any x , x is human \supset x is mortal.

$(x) [Hx \supset Mx]$

Quantification of the E Proposition:

No humans are mortal. (E)

If anything is human, then it is not mortal.

For any given x , if x is a human, then x is not mortal.

Given any x , x is a human \supset x is not mortal.

$(X) [Hx \supset \sim Mx]$

Quantification of the I Proposition:

Some humans are mortal. (I)

There is at least one thing that is human and is mortal.

There is at least one x such that x is a human and x is mortal.

There is at least one x such that x is a human \cdot x is mortal.

$(\exists x) [Hx \cdot Mx]$

Quantification of the O Proposition:

Some humans are not mortal.(O)

There is at least one thing that is a human and is not mortal.

There is at least one x such that x is human and x is not mortal.

There is at least one x such that x is a human · x is not mortal.

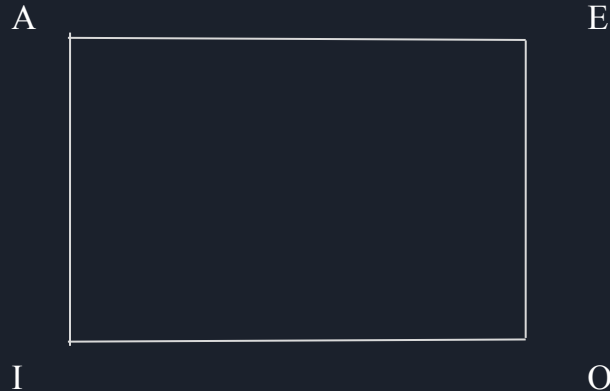
$(\exists x) [Hx \cdot \sim Mx]$



We can use the greek letters phi(ϕ) and psi(ψ) instead of letters-

$$(\forall x) [\phi x \supset \psi x]$$

$$(\forall x) [\phi x \supset \sim \psi x]$$



$$(\exists x) [\phi x \cdot \psi x]$$

$$(\exists x) [\phi x \cdot \sim \psi x]$$