



TOPIC:10.- Problems on Predicate Calculus

① Give the symbolic form of the statement,
"Every book with a blue cover is a Maths book."
For all x , if x is a book with blue cover, then
 x is a Maths book.

$$(\forall x) : (B(x) \rightarrow M(x))$$

where $B(x)$: x is a book with blue cover

$M(x)$: x is a Maths book.

② Let $P(x)$: x is a person

$T(x)$: x trusts others

$R(x)$: x is rewarded

$G(x)$: x is Good

$Q(x)$: x is teasing

Symbolize the following statements :

(a) Some people who trust others are rewarded.

(b) If any one is good then John is good.

(c) Some one is teasing.



a) Statement (a) can be restated as

"There exists an x , x is a person, x trusts and x is rewarded"

\therefore Its symbolic form is $(\exists x)(P(x) \wedge T(x) \wedge R(x))$

b) Statement (b) can be restated as

"If there exists one x , x is a person and x is good, then John is good."

\therefore Its symbolic form is $(\exists x)((P(x) \wedge G(x)) \rightarrow G(j))$

where $G(j)$: John is good.

(c) Statement (c) can be restated as

"There is one x , x is a person and x is teasing"

\therefore Its symbolic form is $(\exists x)(P(x) \wedge Q(x))$



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