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3月3日

(1) (P and Q) ⇒ P

		1	2
P	**Q**	**(P and Q)**	**⇒ P**
T	T	T	**T**
T	F	F	**T**
F	T	F	**T**
F	F	F	**T**

(2) (P⇒Q) ⇒ ((Q⇒R) ⇒ (P⇒R))

			1	5	2	4	3
P	**Q**	**R**	**(P⇒Q)**	**⇒**	**((Q⇒R)**	**⇒**	**(P⇒R))**
T	T	T	T	**T**	T	T	T
T	T	F	T	**T**	F	T	F
T	F	T	F	**T**	T	T	T
T	F	F	F	**T**	T	F	F
F	T	T	T	**T**	T	T	T
F	T	F	T	**T**	F	T	T
F	F	T	T	**T**	T	T	T
F	F	F	T	**T**	T	T	T

(3) (P⇒Q) ⇒ ((R⇒P) ⇒ (R⇒Q))

			1	5	2	4	3
P	**Q**	**R**	**(P⇒Q)**	**⇒**	**((R⇒P)**	**⇒**	**(R⇒Q))**
T	T	T	T	**T**	T	T	T
T	T	F	T	**T**	T	T	T
T	F	T	F	**T**	T	F	F
T	F	F	F	**T**	T	T	T
F	T	T	T	**T**	F	T	T
F	T	F	T	**T**	T	T	T
F	F	T	T	**T**	F	T	F
F	F	F	T	**T**	T	T	T

(4) P and (Q or R) = (P and Q) or (P and R)

			2	1	3	5	4
P	**Q**	**R**	**P and**	**(Q or R)**	**(P and Q)**	**or**	**(P and R)**
T	T	T	**T**	T	T	**T**	T
T	T	F	**T**	T	T	**T**	F
T	F	T	**T**	T	F	**T**	T
T	F	F	**F**	F	F	**F**	F
F	T	T	**F**	T	F	**F**	F
F	T	F	**F**	T	F	**F**	F
F	F	T	**F**	T	F	**F**	F
F	F	F	**F**	F	F	**F**	F

(5) $A, B \subset \mathbb{R}$

S：For all $x \in A$, there exists $y \in B$ such that $x < y$.

~ S：There exist $x \in A$ for every $y \in B$, we have $y \leq x$.

(6) $a_1, a_2, a_3, \cdots \in \mathbb{R}$

S：For every $K \in \mathbb{R}$, there exists $n \in \mathbb{N}$ such that $a_i \geq K$ for all $i \geq n$.

~S：There exists $K \in \mathbb{R}$ for every $n \in \mathbb{N}$, we have $a_i < K$ for some $i \geq n$.