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7 $1^2 + 2^2 + 3^2 + \dots + n^2 = \frac{n(n+1)(2n+1)}{6}$ → Topic A no.7

Bukti:

$n = 1$ → maka $1^2 = \frac{1 \cdot 2 \cdot 3}{6}$ → valid

apabila $n = k$ → maka $1^2 + 2^2 + 3^2 + \dots + k^2 = \frac{k(k+1)(2k+1)}{6}$ (1)

" $n = k+1$ → $1^2 + 2^2 + 3^2 + \dots + (k+1)^2 = \frac{(k+1)(k+2)(2k+3)}{6}$ (

(1) → $(1^2 + 2^2 + 3^2 + \dots + k^2) + (k+1)^2 = \frac{k(k+1)(2k+1)}{6} + (k+1)^2$

$= \frac{k(k+1)(2k+1) + 6(k+1)^2}{6}$

$= (k+1)[k(2k+1) + 6(k+1)]$

$= \frac{(k+1)(2k^2 + 7k + 6)}{6}$

$= \frac{(k+1)(k+2)(2k+3)}{6}$

(2) → $1^2 + 2^2 + 3^2 + \dots k^2 + (k+1)^2$

bagian kiri (2) = kanan bagian (2)
- proves the inductive step.
- positif integer n → True

Premis 1: " Hari ini tidak cerah dan terasa dingin "
Premis 2: " Jika tidak cerah, kami tidak akan berenang "
Premis 3: " Jika kami tidak berenang, maka kami akan berselancar "
Premis 4: " Jika kami berselancar, maka kami pulang lebih awal "
Kesimpulan: " Kami pulang lebih awal "

Topic B no.7

Premis 1 : p
" 2 : q
" 3 : r
" 4 : s

1. p
2. $p \rightarrow q$
3. $q \rightarrow r$
4. $r \rightarrow s$

maka solusi $\therefore s$

p
$p \rightarrow q$
$\therefore q$ (modus ponens)

q
$q \rightarrow r$
$\therefore r$ (modus ponens)

r
$r \rightarrow s$
$\therefore s$ (modus ponens)

maka p
$p \rightarrow q$
$q \rightarrow r$
$r \rightarrow s$

maka argumen diatas = valid