

LAPORAN POSTEST
LOGIKA INFORMATIKA



DISUSUN OLEH:
EKO RACHMAT SATRIYO (2100018142)
KAMIS 15.00-KELAS C

Untitled (2)* - [Server 3] - Maple 2016

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Palettes Workbook

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$$x = a \quad x \geq a$$

$$\sum_{i=k}^n f \quad \prod_{i=k}^n f \quad \frac{d}{dx} f$$

$$\int f dx \quad \int_a^b f dx$$

► Calculus

▼ Common Symbols

π e i j I ∞
 Σ Π \int d \cap \cup
 \geq $>$ \neq \leq $<$
 \nless \nless α \approx \sim
 $=$ \neq \equiv \neq \in \notin
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► Live Data Plots

▼ Variables

Variable Value

> with(Logic)
 [&and, &iff, &implies, &nand, &nor, ¬, &or, &xor, BooleanGraph, BooleanSimplify, Canonicalize, Complement, Contradiction, Dual, Environment, Equivalent, Export, Implies, Import, Normalize, Random, Satisfiable, Satisfy, Tautology, TruthTable, Tseitin] (1)
 > BooleanSimplify((x∧z)&or((¬x)∧y)&or(y∧z)) (x ∧ z) ∨ (y ∧ ¬x) (2)
 > T1 := TruthTable((x∧z)&or((¬x)∧y)&or(y∧z)) (3)

| | x | y | z | value |
|---|-------|-------|-------|-------|
| 1 | false | false | false | false |
| 2 | false | false | true | false |
| 3 | false | true | false | true |
| 4 | false | true | true | true |
| 5 | true | false | false | false |
| 6 | true | false | true | true |
| 7 | true | true | false | false |
| 8 | true | true | true | true |

Mengimplimentasikan kedalam bentuk logika dan tabel kebenarannya(T2)

Menyederhanakan ke ekspresi boolean

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$$x = a \mid x \geq a$$

$$\sum_{i=k}^n f \prod_{i=k}^n \frac{d}{dx} f$$

$$\int_a^b f dx \int_a^b f dx$$

► Calculus

▼ Common Symbols

π e i j I ∞
 Σ Π \int d \cap U
 \geq $>$ \neq \leq $<$
 \leq \neq \approx \sim
 $=$ \neq \equiv \notin
 \subseteq \setminus \emptyset \exists \forall \neg
 \wedge \vee \Rightarrow \Leftrightarrow \mathbb{C} \mathbb{R}
 \mathbb{N} \mathbb{Q} \mathbb{Z} \mathbb{R} \mathbb{S} $:=$
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 $/$ \pm \mp \circ \cdot
 \cdot \circ ∇ $!$ $\&$ \hbar
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► Live Data Plots

▼ Variables

Variable Value

$$> \text{BooleanSimplify}((x \& \text{and } z) \& \text{or}((\& \text{not } x) \& \text{and } y) \& \text{or}(y \& \text{and } z))$$

$$(x \wedge z) \vee (y \wedge \neg x)$$

$$(2)$$

$$> T1 := \text{TruthTable}((x \& \text{and } z) \& \text{or}((\& \text{not } x) \& \text{and } y) \& \text{or}(y \& \text{and } z))$$

$$T1 :=$$

| | x | y | z | value |
|---|-------|-------|-------|-------|
| 1 | false | false | false | false |
| 2 | false | false | true | false |
| 3 | false | true | false | true |
| 4 | false | true | true | true |
| 5 | true | false | false | false |
| 6 | true | false | true | true |
| 7 | true | true | false | false |
| 8 | true | true | true | true |

$$(3)$$

$$> T2 := \text{TruthTable}((x \& \text{and } z) \& \text{or}(y \& \text{and } (\& \text{not } x)))$$

$$T2 :=$$

| | x | y | z | value |
|---|-------|-------|-------|-------|
| 1 | false | false | false | false |
| 2 | false | false | true | false |
| 3 | false | true | false | true |
| 4 | false | true | true | true |
| 5 | true | false | false | false |
| 6 | true | false | true | true |
| 7 | true | true | false | false |
| 8 | true | true | true | true |

$$(4)$$

Membuat ekspresi logika yang telah disederhanakan dan membuat tabel kebenaran (T2). Terbukti T1=T2