

Boolean Algebra

Jun 2-12:16 PM

$$Y = (A \text{ AND } B) \text{ OR } C$$

$$Y = (A \text{ OR } C) \text{ AND } (B \text{ OR } C)$$

Distributive Law

Jun 2-12:17 PM

Commutative Law

$$Y = A \text{ AND } B$$

$$Y = B \text{ AND } A$$

$$(A \text{ AND } B) \text{ OR } (C \text{ OR } D) = (C \text{ OR } D) \text{ OR } (A \text{ AND } B)$$

Jun 2-12:24 PM

Associative Law

$$Y = A \text{ AND } (B \text{ AND } C)$$

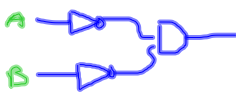
$$Y = (A \text{ AND } B) \text{ AND } C$$

Jun 2-12:24 PM

DeMorgans Law

T11 : De Morgan's Theorem

(a) $\overline{(A \text{ OR } B)} = \bar{A} \text{ AND } \bar{B}$



(b) $\overline{(A \text{ AND } B)} = \bar{A} \text{ OR } \bar{B}$

Jun 2-12:24 PM

$$[A \text{ OR } (B \text{ OR } C)] \text{ AND } D$$

$$(A \text{ AND } D) \text{ OR } [(B \text{ OR } C) \text{ AND } D] \text{ not}$$

$$[A \text{ OR } (B \text{ OR } C)] \text{ AND } D$$

$$[(B \text{ OR } C) \text{ OR } A] \text{ AND } D$$

$$D \text{ AND } [A \text{ OR } (B \text{ OR } C)]$$

$$[A \text{ OR } (C \text{ OR } B)] \text{ AND } D$$

Jun 2-12:28 PM

(A AND B) AND (C AND D) AND E

(A AND B) AND C AND (D AND E)

A AND (B AND C) AND (D AND E)

ASSOC

Jun 2-12:49 PM

[(A AND B) AND C] OR D OR E

E OR [(A AND B) AND C] OR D ~ Commutative

E OR [A AND (B AND C)] OR D ~ Associative

E OR (A OR D) AND [(B AND C) OR D] ~ Distributive

E OR (A OR D) AND [(B AND C) OR D]

Jun 2-12:54 PM

Homework

Apply 3 laws to each of the following (Do not just keep reversing laws)

A AND B OR (C AND D)

[C OR (A AND B)] AND [(D OR F) OR C]

Create a "from here" - "to here" problem that involves all four laws.

Jun 2-1:11 PM