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Comp Sci 1MD3 - Lab 2, Question 7

**Absorption**

B ∧ (B ∨ C) = B

|  |  |  |  |
| --- | --- | --- | --- |
| B | C | B ∨ C | B ∧ (B ∨ C) |
| True | True | True | True |
| True | False | True | True |
| False | True | False | False |
| False | False | False | False |

B ∨ (B ∧ C) = B

|  |  |  |  |
| --- | --- | --- | --- |
| B | C | B ∧ C | B ∨ (B ∧ C) |
| True | True | True | True |
| True | False | False | True |
| False | True | False | False |
| False | False | False | False |

**De Morgan**

­­­­­   ¬ (B ∧ C) = ¬B ∨ ¬C

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| B | C | B ∧ C | ¬ (B ∧ C) | ¬B | ¬C | ¬B ∨ ¬C |
| True | True | True | False | False | False | False |
| True | False | False | True | False | True | False |
| False | True | False | True | True | False | True |
| False | False | False | True | True | True | True |

¬(B ∨ C) = ¬B ∧ ¬C

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| B | C | B ∨ C | ¬ (B ∨ C) | ¬B | ¬C | ¬B ∧ ¬C |
| True | True | True | False | False | False | False |
| True | False | True | False | False | True | False |
| False | True | False | True | True | False | False |
| False | False | False | True | True | True | True |