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Turma: V06

1. Classifique as seguintes proposições como tautologia, contradição ou contingência. Demonstre como chegou à conclusão. Dica: construa as tabelas-verdade.

1. ((p → q) Λ ~q) → ~p  
     
   tautologia

| p | q | ~p | ~q | p → q | (p → q) Λ ~q | ((p → q) Λ ~q) → ~p |
| --- | --- | --- | --- | --- | --- | --- |
| V | V | F | F | V | F | V |
| V | F | F | V | F | F | V |
| F | V | V | F | V | F | V |
| F | F | V | V | V | V | V |

1. ((q Λ p) v ~q) → p  
     
   contingência

| p | q | ~q | q Λ p | (q Λ p) v ~q | ((q Λ p) v ~q) → p |
| --- | --- | --- | --- | --- | --- |
| V | V | F | V | V | V |
| V | F | V | F | V | V |
| F | V | F | F | F | V |
| F | F | V | F | V | F |

1. (p → q) Λ p Λ ~q  
     
   contradição

| p | q | ~q | p → q | (p → q) Λ p | (p → q) Λ p Λ ~q |
| --- | --- | --- | --- | --- | --- |
| V | V | F | V | V | F |
| V | F | V | F | F | F |
| F | V | F | V | F | F |
| F | F | V | V | F | F |

1. ((q v p) Λ ~q) → p  
     
   tautologia

| p | q | ~q | q v p | (q v p) Λ ~q | ((q v p) Λ ~q) → p |
| --- | --- | --- | --- | --- | --- |
| V | V | F | V | F | V |
| V | F | V | V | V | V |
| F | V | F | V | F | V |
| F | F | V | F | F | V |

1. (p Λ ~p) v r  
     
   contingência

| p | r | ~p | p Λ ~p | (p Λ ~p) v r |
| --- | --- | --- | --- | --- |
| V | V | F | F | V |
| V | F | F | F | F |
| F | V | V | F | V |
| F | F | V | F | F |

1. (p Λ ~q) Λ ( ~q → ~p)  
     
   contradição

| p | q | ~p | ~q | p Λ ~q | ~q → ~p | (p Λ ~q) Λ ( ~q → ~p) |
| --- | --- | --- | --- | --- | --- | --- |
| V | V | F | F | F | V | F |
| V | F | F | V | V | F | F |
| F | V | V | F | F | V | F |
| F | F | V | V | F | V | F |

1. (p v ~q) → ( p → ~q)  
     
   contingência

| p | q | ~q | p v ~q | p → ~q | (p v ~q) → ( p → ~q) |
| --- | --- | --- | --- | --- | --- |
| V | V | F | V | F | F |
| V | F | V | V | V | V |
| F | V | F | F | V | V |
| F | F | V | V | V | V |

1. (q Λ p) → (p ↔ q v r)  
     
   tautologia

| p | q | r | q Λ p | p ↔ q | p ↔ q v r | (q Λ p) → (p ↔ q v r) |
| --- | --- | --- | --- | --- | --- | --- |
| V | V | V | V | V | V | V |
| V | V | F | V | V | V | V |
| V | F | V | F | F | V | V |
| V | F | F | F | F | F | V |
| F | V | V | F | F | V | V |
| F | V | F | F | F | F | V |
| F | F | V | F | V | V | V |
| F | F | F | F | V | V | V |