CS 261

Assignemnt 3

Baker, Alex

* 1. Proposition, False
  2. Proposition, False
  3. Proposition, True
  4. Proposition, True
  5. Proposition, False
  6. Not a proposition
  7. If you have the flu, then you miss the final exam.
  8. You pass the course if and only if you make it to the final exam.
  9. If you miss the final exam, then you fail the course.
  10. If you have the flu or you miss the final exam, then you fail the course.
  11. If you make it to the final exam, then you don’t have the flu.

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| p | ¬p | p∧¬p |
| T | F | F |
| F | T | F |

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| P | ¬p | p∨¬p |
| T | F | T |
| F | T | T |

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| P | q | ¬q | p∨¬q | (p∨¬q)→q |
| T | T | F | T | T |
| T | F | T | T | F |
| F | T | F | F | T |
| F | F | T | T | F |

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| P | q | ¬p | ¬q | p→q | ¬q→¬p | (p→q)↔(¬q→¬p) |
| T | T | F | F | T | T | T |
| T | F | F | T | F | F | T |
| F | T | T | F | T | T | T |
| F | F | T | T | T | T | T |

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| --- | --- | --- | --- | --- |
| P | q | p→q | q→p | (p→q)→(q→p) |
| T | T | T | T | T |
| T | F | F | T | T |
| F | T | T | F | F |
| F | F | T | T | T |

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| P | q | p∨q | p⊕q | (p∨q)→(p⊕q) |
| T | T | T | F | F |
| T | F | T | T | T |
| F | T | T | T | T |
| F | F | F | F | T |

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| P | q | p∧q | p⊕q | (p⊕q)→(p∧q) |
| T | T | T | F | T |
| T | F | F | T | F |
| F | T | F | T | F |
| F | F | F | F | T |

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| --- | --- | --- | --- | --- |
| P | q | p∧q | p∨q | (p∨q)⊕(p∧q) |
| T | T | T | T | F |
| T | F | F | T | T |
| F | T | F | T | T |
| F | F | F | F | F |

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| p | q | r | pq | qr | pr |
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* 1. p→(q∨r)
  2. (q∨r) →p
  3. non-CS students are not smart or not happy
  4. If you are not good at math and not good at programming, you do not get into CS.
  5. P(orange) = True
  6. P(lemon) = False
  7. P(true) = False
  8. P(false) = True
  9. ∃x (P(x)∧Q(x))

P(x) = x has lived in florida

Q(x) = x is in discrete math

* 1. ∃x (P(x)∧Q(x))

P(x) = x got a perfect grade

Q(x) = x is in discrete math

* 1. ∀x (P(x)→Q(x))

P(x) = in our class

Q(x) = loves discrete math

* 1. ∃x (P(x)∧Q(x))

P(x) = x has been to every state

Q(x) = x is in discrete math

* 1. ∃x,y (P(x)∧Q(x,y))

P(x) = x is in discrete math

Q(x,y) = x has been to every city in state y