

# COT 3100 Discrete Mathematics

## Extra Credits Homework 1

March 1, 2010

This assignment is **due on Friday, March 19th**.

This is an extra credits assignment. The points from this assignment is added to your first exam. If  $r$  is your score for your first exam, and  $B$  is the number of points you get in this assignment, then your first exam score will become  $r + B$ .

Solve each of the following logical puzzles. For each puzzle, present the solution table, as well as all reasoning / deduction involved in arriving at the solution. **Your solution must be completely correct with proper justification in order for you to receive any points. i.e., if you miss even one item, or does not have justification, you will receive a zero for that puzzle.**

- (10 points) There are 5 tourists (Baylee, Dana, Izabella, Kevin, Kiley), each arrived on a different day of the week (Monday, Tuesday, Wednesday, Thursday, Friday), bought a different souvenir (figurine, kitchen magnet, license plate, snow globe, t-shirt) and plays a different instrument (clarinet, french horn, piano, piccolo, viola). For each person, find out the day of the week s/he arrived, the souvenir s/he bought and the instrument s/he plays, using the clues below.
  - Either the tourist who bought the novelty t-shirt or the tourist who bought the novelty snow globe arrived on Monday.
  - The person who arrived on Wednesday is not Kiley.
  - The person who arrived on Wednesday is not Baylee.
  - Of the tourist who bought the novelty snow globe and the musician who plays the clarinet, one is Kevin and the other is Izabella.
  - The musician who plays the piccolo is not Kiley.
  - The musician who plays the clarinet is not Izabella.
  - The musician who plays the viola arrived sometime before the tourist who bought the novelty license plate.
  - The tourist who bought the novelty kitchen magnet arrived the day after Baylee.
  - Of Izabella and the tourist who bought the novelty t-shirt, one arrived on Tuesday and the other plays the piano.
  - The tourist who bought the novelty figurine is not Kevin.
  - The five individuals are the person who arrived on Tuesday, the musician who plays the piano, the person who arrived on Thursday, Kiley and the tourist who bought the novelty figurine.
- (5 points) There are 5 people (Carter, Davis, Greyson, Josie, Peyton), each has a different age (21, 47, 49, 52, 60), likes a different drink (cherry cola, cola, diet cola, orange soda, root beer) and saw a different bird (condor, eagle, scarlet tanager, sparrow, woodpecker). For each person, find out his/her age, the drink s/he likes and the bird s/he saw, using the clues below.

1. The one who drinks orange soda is not Davis.
  2. The 60 year-old is not Peyton.
  3. The 5 people were the one who drinks root beer, Davis, the one who saw the condor, the 49 year-old, and the one who drinks cherry cola.
  4. The one who drinks cherry cola never saw the woodpecker.
  5. The one who drinks root beer never saw the eagle.
  6. The 52 year-old loves to drink cherry cola.
  7. The one who drinks orange soda is older than the one who drinks cola.
  8. The one who saw the woodpecker is younger than Peyton.
  9. The one who drinks diet cola is Greyson.
  10. The 21 year-old never saw the woodpecker.
  11. The one who drinks diet cola saw the scarlet tanager.
  12. The 47 year-old is Davis.
  13. Josie is older than the one who drinks diet cola.
  14. The one who saw the woodpecker is not Josie.
3. (5 points) There are 5 people (Andrea, Anna, Jason, Tristen, Zachary), each was married in a different year (1941, 1946, 1951, 1979, 1982), received a different wedding gift (blender, coffee maker, cutlery set, juice press, microwave) and likes a different kind of cheese (fontina, gorgonzola, limburger, parmesan, pepperjack). For each person, find out the year s/he married, the wedding gift s/he received and the kind of cheese s/he likes, using the clues below.
1. The person married in 1979 is Anna.
  2. The 5 people were the person married in 1951, the pepperjack enthusiast, the person who received the blender, Tristen, and the person married in 1982.
  3. The person married in 1941 loved the juice press they received.
  4. The gorgonzola enthusiast is not Andrea.
  5. Jason got married before Zachary.
  6. The parmesan enthusiast didn't receive the coffee maker.
  7. Of the pepperjack enthusiast and Andrea, one got married in 1941 and the other loved the microwave they received.
  8. The person who received the coffee maker got married before the gorgonzola enthusiast.
  9. Either the parmesan enthusiast or the pepperjack enthusiast is Zachary.
  10. The person married in 1951 doesn't like fontina.
  11. Andrea got married after the limburger enthusiast.