University of Puerto Rico at Mayagüez
College of Engineering

Fall 2014

ICOM 4075: Foundations of Computing

Assignment #2 (Due: September 17th in class)

Please complete each of the following problems. Please submit for grading all the problems typed in **bold face** by the due date. All your answers must be hand-written with pencil or ball point and submitted for grading on paper. Your should submit you papers stapled and without any folders nor additional binding materials. No type written nor late submissions will be accepted. These exercises constitute a minimum set of exercises. **You should try to solve as many exercises as you can.**

DMA[1] Section 1.4

1. Translation of predecates:

   Exercises 6.f, 8.c, 10.a to 10.e, **28.a to 28.e**

2. Evaluating truth value of predicates after assignment:

   Exercises 12.b, 12.e, 12.f, 14.d, **52.b, 52.c**

3. Reform predicates involving quantifier, not using quantifier:

   Exercises 18.a, 18,d, 18.f, **20.e**, 30.a to 30.d, **54**

4. Domain:

   Exercises **22.c**, 24.a, 24.b

5. Negation of quantifiers:

   Exercise **32**

6. Logical equivalence of predicates:

   Exercises 44, 48 (includes null quantification), **50**

DMA Section 1.5

7. Translation of nested quantifiers:

   Exercise 4, 6, 10, **22**

8. Negate of nested quantifiers:

   Exercises 30.c, 30.e, **32.c, 32.d**, 36.b (Do not use ∃! in these exercises)

9. Domain for nested quantifiers:

   Exercise **34,** 46 (involves the evaluation of quantifiers)

[1] DMA refers to the class textbook "Discrete Mathematics and Applications" by Rosen