Math 1020Q – Problem Solving

Welcome to the Wonderful World of Math 1020Q!

Description: An introduction to the techniques used by mathematicians to solve problems. Skills such as Externalization (pictures and charts), Visualization (associated mental images), Simplification, Trial and Error, and Lateral Thinking learned through the study of mathematical problems. Problems drawn from combinatorics, probability, optimization, cryptology, graph theory, and fractals. Students will be encouraged to work cooperatively and to think independently.

Prerequisites: Recommended preparation: MATH 1010 or the equivalent. Not eligible for course credit by examination. Not open for credit to students who have passed any mathematics course other than MATH 1010, 1011, 1030, 1060 or 1070.

Text: PProblem SSSolving, 3rd edition, DeFranco, Vinsonhaler, & Naigles,
ISBN 978-1-285-90866-3

Here you will find a sample course outline. Consult your own instructor for an outline relevant to your own course.

Week	Date	Material	Assignment due on Date
1	Jan 19, 2017	Chapters 1,2 – Problem Solving, PSSSP	
2	Jan 26, 2017	Chapter 3 – Be Proactive	Automathography, Heap Letter
3	Feb 2, 2017	Chapter 4 – See it	Symmetry
4	Feb 9, 2017	Chapter 4 – See it, Chapter 5 – Simplify it	Prom Problem
5	Feb 16, 2017	Chapter 5 – Simplify it, Exam #1	Parking Lot
6	Feb 23, 2017	Chapter 6 – Stir it up	Forty Thieves
7	Mar 2, 2017	Chapter 6 – Stir it up	Should you switch?
8	Mar 9, 2017	Chapter 7 – Pause and Reflect	Faculty Debts
9	Mar 16, 2017	Spring Break!	
10	Mar 23, 2017	Chaps 8,9 – Interpersonal, Communication	Grilled Cheese
11	Mar 30, 2017	Estimation	Grappling with Groups
12	Apr 6, 2017	Review and Exam #2	Beech Tree (10 ways to measure)
13	Apr 13, 2017	Revisit PSSSP and work on Final Project	House Hunt
14	Apr 20, 2017	Revisit PSSSP and review for Final Exam	True and False
15	Apr 27, 2017	Presentation of Final Projects	

Learning Activities:

You will be assigned projects during the semester to be worked on individually or in groups. One write-up will be submitted for each student. Projects will be graded on accuracy, creativity and presentation. The most important aspect of these projects is clear explanations of your approach and conclusions. Solutions without explanations will get very low scores. We will begin the projects in class, but frequently additional time outside of class will be required to complete them. Groups may be asked to present their project solutions to the class.

Exam Info:

There are two hourly exams during the semester, currently scheduled for weeks 5 and 11. There will also be a final exam, which is cumulative.

The best way to prepare for the exams is to be familiar with all the stretches and text problems done in class, as well as the homework assignments. Many exam questions are related to the work done in class and in the homework assignments.

Each individual instructor will provide you further details on Exams throughout the semester.