MA 308

Homework #4

Due Tuesday, February 15

1. A box contained 31 chocolates. The first day, Gabriela ate 3/4 of the number that Pam ate. The second day, Gabriela ate 2/3 of the number that Pam ate that day, and the chocolates were all gone. How many chocolates did Gabriela eat? Explain why your solution is correct. Write neatly and use complete sentences, writing to an audience of middle school students.

2. Read the "Crawling Snail" problem on page 31 and the associated guiding questions. Answer this question: What if the snail moves up k feet every day and slips back n feet at night? Explain why your solution is correct. Write neatly and use complete sentences, writing to an audience of middle school students.

3. Study the "Lots of Squares" problem on page 39–41, and the associated guiding questions. Write up a solution in your own words. Explain why your solution is correct. Write neatly and use complete sentences, writing to an audience of middle school students. You will probably need to include diagrams.

4. Imagine you have in front of you two cardboard cubes. They can be any size. You also have a magic marker. There's nothing written on these cubes — yet. You're going to write something on them with the magic marker. You'd like to use these cubes to be able to represent any date of the month. For example, if today is the 3rd of the month, you want to be able to put the cubes side by side so that the top number on the first cube would be zero and the top number on the second cube would be three. If it was the 22nd of the month, you want to be able to put the cubes side by side so that the top number on each of the cubes is a 2. You've got six sides on each cube, and with those six sides you need to be able to place numbers so that you will be able to represent every single possible date. How do you do it? Here's a hint: Think outside of the box.