

**WORD PROBLEM WITH A POSITIVE MESSAGE  
DRAFT 4**

JEFF ADLER

Alan used to have twice as many candy bars as Betty. But then he ate two of them, and now he has only 60% more candy bars than Betty.

If you take either the number of sisters that Alan has, or the number of neighbors that Betty has, and multiply this number by the amount by which it is exceeded by the number of Betty's candy bars, then you obtain a perfect number.

Alan and Betty were riding on trains that were scheduled to travel toward each other, starting at noon, from initial positions whose distance from each other, measured in miles, is 20 times the number of candy bars that Alan and Betty have between them. Assume that each train accelerated in a negligible amount of time to a speed that it then maintained for the rest of the journey. The speed of Alan's train, measured in miles per hour, was the sum of the ages of Betty and all of her neighbors apart from the oldest, where all ages are measured in years and are rounded down to the nearest year. The speed of Betty's train, measured in furlongs per hectominute, exceeded, by a third of the number of candy bars that Alan and Betty have between them, the smallest number that can be written as a sum of two perfect cubes in two different ways. But Betty's train was delayed by a number of hours that, coincidentally, equals the number of Alan's sisters.

Alan and Betty waved as their trains passed each other, and Betty was struck by the fact that at that moment, the minute hand on the clock was pointing to the average number of crostini consumed by each person at a party she had hosted the previous week. Had her party been twice as large, it would have been the smallest possible party with the property that, without knowing anything at all about the people there, one could be sure that either there were four of them who had all shaken hands with each other before, or that there were four of them none of whom had ever shaken hands with each other before. Crostini cost her 23 cents each, but her caterer had rounded the total price of the crostini down to the nearest dollar, saving Betty a number of cents

that was exactly equal to the number of eggs that Alan bought when they met after their train rides.

Had she not noticed this coincidence, Alan surely would have pointed it out to her.

Alan filled as many one-dozen egg cartons as he could, and then used the remaining eggs to make Betty an omelette, while Betty gave him an earful about her neighbors: “The product of their ages is 2450, and the sum of their ages is twice your age!” But Alan couldn’t figure out their ages. She added, “I’m older than all of them,” and then he knew.

Everyone, Alan, his sisters, Betty, her neighbors, Carl, and the vampire who is stalking them all, likes to go to a certain convenience store, part of a well-known international chain that is named after two numbers. Alan can’t help but notice that if you subtract the number of his sisters from each of these two numbers, and take the product of the two resulting differences, then you get the cube root of Betty’s zip code. If you take the name of the locality where she lives, and replace each letter A by 1, B by 2, etc., and add up the resulting numbers, then the largest prime factor of the sum is the atomic number of an element whose most common isotope has a number of neutrons that, when represented in base 7, has digits whose sum, when you subtract the square root of the number of eggs in Betty’s omelette, yields precisely double the number of fish that Carl caught at the lake.

How many fish did Carl catch?

By the way, Alan’s sisters like to go swimming together at the same lake, just them and no one else. If you do that, then be safe, and always use the buddy system, like they do. LIKE and SHARE this with everyone you know! YOU COULD SAVE A LIFE!!