

Homework 11

Changing What You Eat

In *Homework 10: You Are What You Eat*, the twins' solution was simply to eat Sugar Glops. That way, they could get their protein by eating only $2\frac{1}{2}$ ounces of cereal and still not get too many grams of carbohydrate. But what if the cereals had been a little different from the way they were in that problem, or if Mr. Hernandez had been stricter about the twins' carbohydrate intake, or ...?



Here are some specific variations for you to work on.

1. Suppose that Sugar Glops is the same as in the original problem (with 2 grams of protein and 15 grams of carbohydrate per ounce), but now Sweetums also has 2 grams of protein per ounce (and still only 10 grams of carbohydrate per ounce). Also suppose that Mr. Hernandez still has a 50-gram limit on carbohydrate and wants each of the twins to get at least 5 grams of protein.

How much of each cereal should the twins eat if they want to eat as little cereal as possible?

2. Now suppose that Sugar Glops has 3 grams of protein and 20 grams of carbohydrate per ounce, while Sweetums is the same as in Question 1 (2 grams of protein and 10 grams of carbohydrate per ounce). Also suppose that Mr. Hernandez has now decided that the twins can't eat more than 30 grams of carbohydrate (but they still need at least 5 grams of protein).

What should the twins do?