7th-8th Grade Sugar Math

Calculate the answers to the following items and show your work. Round to the nearest tenth.

1. An average sugarcane stalk weighs about 3 pounds (1.3 kilograms) and is 85% juice. How many pounds of juice will an average stalk produce?

2. The juice squeezed out of a sugarcane stalk is about 11% sugar by weight. How many pounds of sugar can be produced from one stalk?

3. How many actual stalks of sugarcane will it take to produce a 5-pound bag of sugar?

4. Average refined sucrose sugar consumption in the U.S. is approximately 77 lbs per person per year. How many stalks of sugarcane are needed to produce this sugar?

5. In 2011, the average American consumed 77 pounds of refined sugar, 62 pounds of corn-derived sweeteners, 1.5 pounds of honey and edible syrups, for a total annual consumption of 140.5 pounds. Graph this data in a manner that best depicts it for easy comprehension.

Sugar Math Answer Key

1. **2.6 pounds (1.1 kilograms) of juice.**
   Each stalk is about 3 lbs; 85% of each stalk is juice; so, just multiply .85 X 3 lbs =2.55 or ~2.6 lbs

2. **An average stalk contains about 0.3 pounds (0.12 kilograms) of sugar.**
   11% of each stalk (3 lbs) is juice so just multiply 3 lbs X .11 = .33 or ~.3 lbs of sugar.

3. **16.7 stalks are needed to make 5 pounds of granulated sugar. Set up a proportion and cross multiply 1 stalk/.3 lbs of sugar = x stalks/5lbs of sugar**
   .3x/.3 = 5/.3
   X = 16.67 or ~16.7 stalks

4. **This could be obtained from approx. 256.7 stalks of sugarcane. Using the response obtained from item 4, set up a proportion and cross multiply.**
   16.67 stalks/5 lbs = x stalks/77 lbs
   5x/5 =11283.59/5
   X =256.71 stalks or ~257 stalks

5. **Answers will vary. One possible solution is a bar chart or pie chart.**

Annual U.S. Sweetener Consumption in Pounds-- 140.5 lbs total

Yearly U.S Sweetener Consumption in Pounds, [140.5 total lbs.]

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