

Answer on Question #43680 – Math – Algebra

Together, a 20 fluid ounce Coca-Cola and a 20 fluid ounce Pepsi contain 34 teaspoons of added sugar. The Coca-Cola contains 1 tsp less of added sugar than the Pepsi. (Source: Nutrition Action HealthLetter, January/February 2010) Find the amount of added sugar in each type of soft drink.

Solution.

Assume that Coca-Cola contains x tsp of added sugar and Pepsi contains y tsp. Then $x + 1 = y$. Also, $20x + 20y = 34$. Now we solve the system of equations:

$$\begin{cases} x + 1 = y, \\ 20x + 20y = 34; \end{cases} \begin{cases} x + 1 = y, \\ 20x + 20x + 20 = 34; \end{cases} \begin{cases} x + 1 = y, \\ 40x = 14; \end{cases} \begin{cases} 1.35 = y, \\ x = 0.35. \end{cases}$$

Thus, Coca-Cola contains 0.35 tsp of added sugar per fluid ounce and Pepsi contains 1.35 tsp of added sugar per fluid ounce.