Problem of the Week
Problem C and Solution
Berry Picking

Problem

Owen, Gabriel, and Ariane work as strawberry pickers at a local farm. One week Owen picked 135 more strawberries than Gabriel, and Ariane picked 110 more strawberries than Owen. In total that week Owen, Gabriel, and Ariane picked 2000 strawberries.

Determine the number of strawberries that each person picked.

Solution

Solution 1

Let g be the number of strawberries that Gabriel picked. It follows that Owen picked $(g + 135)$ strawberries and Ariane picked $(g + 135 + 110)$ strawberries. Since they picked 2000 strawberries in total, we can write and solve the following equation:

$$g + (g + 135) + (g + 135 + 110) = 2000$$
$$g + (g + 135) + (g + 245) = 2000$$
$$3g + 380 = 2000$$
$$3g = 1620$$
$$g = 540$$

So, $g + 135 = 675$ and $g + 135 + 110 = 785$.

Thus, Gabriel picked 540 strawberries, Owen picked 675 strawberries, and Ariane picked 785 strawberries.

Solution 2

If Owen had picked 135 fewer strawberries, and Ariane had picked $135 + 110 = 245$ fewer strawberries, then each would have picked the same number of strawberries as Gabriel. In that case, each person would have picked $\frac{1}{3}$ of $(2000 - 135 - 245)$, which is $\frac{1}{3} \times 1620 = 540$ strawberries.

Thus, Gabriel picked 540 strawberries. Then Owen picked $540 + 135 = 675$ strawberries and Ariane picked $540 + 245 = 785$ strawberries.