

The Canteen Receipt Mystery

Receipt A shows 2 samosas and 3 juices for UGX 8,000. Receipt B shows 3 samosas and 2 juices for UGX 8,500. Recover both missing item prices.

THE MISSION

Tomorrow's order contains 4 samosas and 5 juices. Prove whether the correct total is UGX 14,600, UGX 13,000 or UGX 16,500.

Clear situation. Visible reasoning. A decision you can defend.

Before you begin

Name: _____ Class: _____ Date: _____

LEARNING GOALS

define unknowns; form two equations from a situation; eliminate one unknown; substitute and verify both answers

The situation

Receipt A shows 2 samosas and 3 juices for UGX 8,000. Receipt B shows 3 samosas and 2 juices for UGX 8,500. Recover both missing item prices.

What information is known, and what must you find?

Build the foundation

CHOOSE SYMBOLS

Let s be the price of one samosa and j the price of one juice.

BUILD EQUATIONS

Receipt A: $2s + 3j = 8,000$. Receipt B: $3s + 2j = 8,500$.

SOLVE TOGETHER

The same prices occur in both receipts, so both equations must be true at once.

Explain the big idea in your own words.

Follow the worked reasoning

Match j

2 x Receipt A: $4s + 6j = 16,000$. 3 x Receipt B: $9s + 6j = 25,500$.

Subtract

$5s = 9,500$, so $s = \text{UGX } 1,900$.

Substitute

$2(1,900) + 3j = 8,000$, so $j = \text{UGX } 1,400$.

Now you try

1. Write an equation for 4 samosas and 1 juice costing UGX 9,000.

2. Solve: $x + y = 9$ and $x - y = 3$.

3. Check $s = 1,900$ and $j = 1,400$ in Receipt B.

4. Find the cost of 4 samosas and 5 juices.

Final scenario challenge

YOUR DECISION

Tomorrow's order contains 4 samosas and 5 juices. Prove whether the correct total is UGX 14,600, UGX 13,000 or UGX 16,500.

Show your calculations.

Write a recommendation that uses your mathematics as evidence.
