

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.

Lesson at a glance

CURRICULUM FOCUS	Senior 3 Mathematics - Simultaneous Equations. Suggested time: 60-75 minutes or two classroom periods.
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Learning outcomes

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

Teaching sequence

1. Read the situation without calculating.
2. Ask learners to identify known and unknown information.
3. Build the mathematical representation together.
4. Model one worked example and explain each decision.
5. Let learners complete the quick checks.
6. Finish with the scenario challenge and a written justification.

TEACHER PROMPT	Do not ask only, 'What is the answer?' Ask, 'What does this number mean in the situation, and how can we check it?'
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Foundation teaching notes

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.

Worked model

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 $j = \text{UGX } 1,400$.

Practice answers

1. $4s + j = 9,000$
2. $x = 6, y = 3$
3. $3(1,900) + 2(1,400) = 8,500$
4. UGX 14,600

Support

Keep the situation visible. Let learners label quantities and units before calculating. Break one long method into short decisions and require a check after the answer.

Stretch

Ask learners to change one number in the situation, predict how the answer will change, then solve and compare with the prediction.

Final scenario - complete response

CHALLENGE

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.

UGX 14,600 because $4(1,900) + 5(1,400) = 7,600 + 7,000$.

What a strong response contains

- a correct mathematical representation;
- visible calculation steps;
- a check against the original situation;
- a clear final sentence that answers the real problem.

EXIT TICKET

Ask the learner to complete: 'My answer is reasonable because ...'