Checking Solutions Carefully

TOPIC 4 / MATHEMATICS

Write. Represent. Explain.

45-minute lesson • Original classroom examples

What will we learn today?

- Check candidate values and explain false statements.
- Use an equation, inequality, table, or diagram to justify your reasoning.
- Explain your answer using mathematical vocabulary and units.

5-minute warm-up

Discuss with a partner: What previous algebra or number skill will help with today’s lesson?

Show one calculation or example in your notebook.

Why this lesson matters

Two friends disagree whether 7 or 8 makes 3n + 5 = 26 true.

What is known? What is unknown? Which quantities are related?

Represent the relationship

Two friends disagree whether 7 or 8 makes 3n + 5 = 26 true.

$$3n + 5 = 26$$

Explain the meaning of the variable, numbers, and operations.

Worked example

Compare n = 7 and n = 8 in 3n + 5 = 26.

$$3(7) + 5 = 26 \quad ✓$$

Check: Does the result match the original relationship?

Independent practice

1. Test $x = -2$ in $5x + 9 = -1$.

2. Test $a = 3.5$ in $2a + 4 = 11$.

Check your reasoning

Question 1

$$5(-2) + 9 = -1$$

Question 2

$$2(3.5) + 4 = 11$$

Group challenge

Choose a solution from 4, 5, 6 for $6t - 7 = 23$; defend your choice.

Each group member must explain one step or defend one claim.

Group challenge • solution

$$6(5) - 7 = 23$$

Compare methods. Does the answer make sense in context?

Additional Practice — If Time Allows

Test a = 3.5 in 2a + 4 = 11.

Extension: Create a similar problem with different numbers.

2-minute exit ticket

Is p = 0 a solution to 4p + 3 = 3?

Work independently. Show enough steps to explain your thinking.

Exit ticket • answer

$$4(0) + 3 = 3$$

Reflect: What would you check before moving to the next lesson?