MATHEMATICS · GRADES 4-6

Checking calculations using inverse operations

Difficulty level: Intermediate

Mathematics: Grades 4-6

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Overview of the concept

This is how you prove a calculation is right. You check a division with multiplication, or a subtraction with addition, by undoing it and landing back where you started. If the undo lands you back at the original number, the calculation was right, and if it does not, you know exactly where to look for the mistake.



Rule

Check a calculation by undoing it with the inverse operation.

Addition is undone by subtraction, subtraction by addition, multiplication by division, and division by multiplication. If undoing the calculation lands you back where you started, the calculation is correct.

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Worked examples

EXAMPLE 1

Q Check 456 + 278 = 734

SOLUTION

Start: 456 + 278 = 734

Check: 734 - 278 = 456

Back to 456 -> Correct

Addition is undone by subtraction, so subtract one addend — one of the numbers being added — from the total.

Compute: 734 - 278 = 456

You are back at the other addend, so 734 is correct.

EXAMPLE 2

Q Check 96 ÷ 4 = 24

SOLUTION

Start: 96 ÷ 4 = 24

Check: 24 × 4 = 96

Back to 96 -> Correct

Division is undone by multiplication, so multiply the quotient — the answer to the division — by the divisor — the number you divide by.

Compute: 24 × 4 = 96

You are back at the starting number, so 24 is correct.

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Practice questions

1. 345 + 267 = 612. Undo the addition to check it. What do you get?

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2. 800 - 345 = 455. Undo the subtraction to check it. What do you get?

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3. 34 × 6 = 204. Undo the multiplication to check it. What do you get?

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4 **96 ÷ 8 = 12. Undo the division to check it. What do you get?**

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5 **523 + 189 = 712. Undo the addition to check it. What do you get?**

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6 **1000 - 678 = 322. Undo the subtraction to check it. What do you get?**

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7 **45 × 7 = 315. Undo the multiplication to check it. What do you get?**

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8 **144 ÷ 12 = 12. Undo the division to check it. What do you get?**

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9 **678 - 234 = 444. Undo the subtraction to check it. What do you get?**

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10 **$123 \times 4 = 492$. Undo the multiplication to check it. What do you get?**

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ANSWER KEY

1. 345

2. 800

3. 34

4. 96

5. 523

6. 1000

7. 45

8. 144

9. 678

10. 123

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