



Answers

Year 5

Multiplying & Dividing Decimals by 10, 100, 1000

Read the explanations carefully if you made a mistake to see how the numbers shifted.

Part 1: Arithmetic Warm-up

1. 42.6

Why? Multiplying by 10 moves the digits **one** place to the left. The 4 moves from the ones column to the tens column.

2. 0.158

Why? Dividing by 100 moves the digits **two** places to the right. The 1 moves from the tens column past the decimal point into the tenths column.

3. 73

Why? Multiplying by 1,000 moves the digits **three** places to the left. 0.073 becomes a whole number.

4. 0.6124

Why? Dividing by 1,000 moves the digits **three** places to the right. All the numbers slide down together.

5. 93

Why? Multiplying by 100 moves the digits **two** places to the left. The 9 skips from the tenths up to the tens column.

Part 2: SATs-Style Missing Number Questions

6. 100

Check: Look at 6.108 and 610.8. The digits shifted **two** places to the left, which means it was multiplied by 100.

7. $43.9 \boxed{\div} 100 = 0.439$

Check: 43.9 became 0.439. The number got smaller, so the missing sign must be a **division** ($\div$) sign.

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8. 25

Check: Work backward! Do the opposite of division and multiply 0.025×1000 . Shifting the digits three places to the left gives you 25.

9. 100

Check: Break it into two halves. The left side is $0.74 \times 10 = 7.4$. To make the right side balance and also equal 7.4, you need to do $740 \div 100$.

Part 3: Balance and Comparison

10. $3.4 \times 100 = 3400 \div 10$ true

Both sides equal 340.

$0.091 \times 1000 = 9.1 \times 10$ true

Both sides equal 91.

$82.3 \div 10 = 8230 \div 1000$ true

Both sides equal 8.23.

Part 4: Word Problems and Reasoning

11. 0.145 kg

How to solve: You need to find the weight of *one* book out of 100. Divide the total weight by 100:

$14.5 \div 100 = 0.145 \text{ kg}$

12. 12 grams

How to solve: You need to find the total weight of 1,000 paperclips. Multiply the weight of one paperclip by 1,000:

$0.012 \times 1000 = 12 \text{ grams}$

13. $0.054 \times 1000 = 5.4$

Your explanation should say something like:

“Olivia's final calculation is wrong because 0.054×1000 should equal 54, not 5.4. Multiplying by 1,000 means the digits must move three places to the left, but she only moved them two places.”