Year 6

Answers

Multiplying and Dividing Decimals (10, 100, 1000)

Time to check your progress and see how well you did.

Part 1: Advanced Arithmetic Warm-up

1. 4
   Why? Multiplying by 1000 shifts the digits **three** places left. The 4 travels from the thousandths column up to the ones column.

2. 0.7013
   Why? Dividing by 100 shifts digits **two** places right.

3. 609.2
   Why? Multiplying by 100 shifts digits **two** places left. The decimal point remains perfectly locked between the 9 and the 2.

4. 0.032
   Why? Dividing by 1000 shifts digits **three** places right. Use zero as a placeholder in the ones and tenths columns.

5. 8.05
   Why? Multiplying by 10 shifts digits **one** place left.

Part 2: SATs-Style Multi-Step & Missing Numbers

6. 100
   Check: Work out the left side first: $0.07 \times 100 = 7$. To make the right side equal 7, you must calculate $700 \div 100$.

7. 0.405
   Check: Work backward by dividing: $40.5 \div 100 = 0.405$.

8. $9.1 \boxed{\div} 10 \boxed{\div} 10 = 0.091$

   Check: $9.1 \div 10 = 0.91$. Then, $0.91 \div 10 = 0.091$.

9. $1{,}000$
   Check: The left side equals 6.18. To make the right side balance to 6.18, shift the digits of 6180 three places right by dividing by $1{,}000$.

Continued ...

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Part 3: SATs-Style Comparison & Sorting

10. Inequality Symbols

a) $0.045 \times 1000 = 450 \div 10$

Why? The left side is 45 and the right side is 45. Since they are equal, we use the $=$ symbol.

b) $72.3 \div 100 < 0.723 \times 10$

Why? The left side is 0.723 and the right side is 7.23. Because 0.723 has 0 in the ones column and 7.23 has 7 in the ones column, 0.723 is smaller, so we use the $<$ (less than) symbol.

c) $0.009 \times 100 > 90 \div 1000$

Why? The left side is 0.9 and the right side is 0.09. Since 0.9 has 9 tenths and 0.09 has 0 tenths, 0.9 is larger, so we use the $>$ (greater than) symbol.

Part 4: Real-World SATs Context & Reasoning

11. 35 ml

Step 1: Convert the total volume to ml: 3.5 litres $\times 1000 = 3500$ ml.

Step 2: Divide the total ml by 100 vials: $3500 \div 100 = 35$ ml.

12. 0.02 kg

Step 1: Subtract the empty crate weight to isolate the bolt weight:
24.8 kg $- 4.8$ kg $= 20$ kg.

Step 2: Divide the total bolt weight by $1{,}000$ bolts: $20 \div 1000 = 0.02$ kg.

13. Amina is correct.

When you multiply by 1000 you shift the digits three places to the **left**.

When you divide by 100 you shift them two places back to the **right**.

Overall, the digits have moved **one place to the left**, which is the same as multiplying the original number by 10.