Name: _____ Date: _____

Multiplying and Dividing by Powers of 10

Grade 5 | Multiplying and dividing by powers of 10, including exponents | Version 5 of 10

Powers of 10: $10^1 = 10$, $10^2 = 100$, $10^3 = 1{,}000$. Multiplying by 10 moves each digit one place to the left; dividing by 10 moves each digit one place to the right.

Part A: Multiply by a power of 10. The exponent tells how many zeros to write.

1. $17 \times 10^3 =$ _____
2. $52 \times 10^1 =$ _____
3. $78 \times 10^1 =$ _____
4. $44 \times 10^2 =$ _____
5. $8 \times 10^1 =$ _____
6. $81 \times 10^2 =$ _____

Part B: Multiply. Move the decimal point one place to the right for each power of 10.

7. $8.9 \times 100 =$ _____
8. $94.1 \times 10^3 =$ _____
9. $58.46 \times 10^2 =$ _____
10. $16.87 \times 10 =$ _____
11. $94.6 \times 10^2 =$ _____
12. $26.4 \times 100 =$ _____

Part C: Divide. Move the decimal point one place to the left for each power of 10.

13. $2.4 \div 10^3 =$ _____
14. $803 \div 1{,}000 =$ _____
15. $37.8 \div 10 =$ _____
16. $94.4 \div 10^2 =$ _____
17. $8.2 \div 1{,}000 =$ _____
18. $977 \div 10^1 =$ _____

Multiplying and Dividing by Powers of 10 - ANSWER KEY

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Powers of 10: $10^1 = 10$, $10^2 = 100$, $10^3 = 1{,}000$. Multiplying by 10 moves each digit one place to the left; dividing by 10 moves each digit one place to the right.

Part A: Multiply by a power of 10. The exponent tells how many zeros to write.

1. $17 \times 10^3 =$ **17,000**
2. $52 \times 10^1 =$ **520**
3. $78 \times 10^1 =$ **780**
4. $44 \times 10^2 =$ **4,400**
5. $8 \times 10^1 =$ **80**
6. $81 \times 10^2 =$ **8,100**

Part B: Multiply. Move the decimal point one place to the right for each power of 10.

7. $8.9 \times 100 =$ **890**
8. $94.1 \times 10^3 =$ **94,100**
9. $58.46 \times 10^2 =$ **5,846**
10. $16.87 \times 10 =$ **168.7**
11. $94.6 \times 10^2 =$ **9,460**
12. $26.4 \times 100 =$ **2,640**

Part C: Divide. Move the decimal point one place to the left for each power of 10.

13. $2.4 \div 10^3 =$ **0.0024**
14. $803 \div 1{,}000 =$ **0.803**
15. $37.8 \div 10 =$ **3.78**
16. $94.4 \div 10^2 =$ **0.944**
17. $8.2 \div 1{,}000 =$ **0.0082**
18. $977 \div 10^1 =$ **97.7**