**Unit 1: Test 3 Study Guide: Multiply and Divide by Powers of Ten**

**MCC5.NBT.2** Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

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| --- | --- |
| 1. **What is the product of 56 x 1000?**
 | 1. **What is the product of 70 x 103?**
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| 1. **Frankenstein worked the equation below and found the product.**

**46 x 10,000,000 = 460,000,000****Was he correct? \_\_\_\_\_\_\_\_\_\_\_\_\_\_****Evaluate the equation to check his work. Explain your answer.** | 1. **Lincoln solved the equation below, and his teacher marked his answer wrong.**

**35 x 103 = 350,000****Did his teacher make a mistake? \_\_\_\_\_\_\_\_** **Explain your answer** |
| 1. **What is the quotient of 7000 ÷ 100?**
 | 1. **What is the quotient of 280 ÷ 10?**
 |
| 1. **Bert and Ernie both solved the equation below:**

**7850 ÷ 1000****Bert answered 78.50** **Ernie answered 7,850,000****Which student was correct?****Explain your answer.** | 1. **Harry says that 8.9 x 100 = 8900. Identify Harry’s mistake.**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****What is the correct answer?** |
| 1. **Find the product and write in standard form**

**2 x 106 =****\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | 1. **In the equation 53.4 x 1000 =**

**Would the decimal move to the left or to the right? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****How many spaces would the decimal move? \_\_\_\_\_\_\_\_\_\_\_\_** |
| 1. **Eustace has the problem 8.63 ÷ 1,000,000. How can he rewrite the problem using exponents?**
 | 1. **Jonathan multiplied .76 x \_\_\_\_ and got the answer 760. What did he multiply by the get that answer?**
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| 1. **What happens to 89 when you divide it by 102?**
2. **The product is greater than 89.**
3. **The product is one half of 89.**
4. **The product is equal to 89.**
5. **The product is less than 89.**
 | 1. **Look at the pattern and decide what the next entry in the pattern should be.**

**5070 x 1 = 5,070****5,070 x 10 = 50,700****5,070 x 100 = 507,000****\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| 1. **Use <, >, or = to compare the products. Explain why you chose your answer.**

**92.5 x 10 \_\_\_\_\_\_\_\_\_ 9.25 x 100** | 1. **Use <, >, or = to compare the quotients. Explain why you chose your answer.**

**600 ÷ 100 \_\_\_\_\_\_\_ 6000 ÷ 100** |
| 1. **Use <, >, or = to compare the products. Explain why you chose your answer.**

**63.8 x 103 \_\_\_\_\_\_\_\_\_\_\_\_ 63.8 x 104** | 1. **Use <, >, or = to compare the quotients. Explain why you chose your answer.**

**500,000 ÷ 103 \_\_\_\_\_\_\_\_\_ 5,000 ÷ 10** |