ALBERT

Name _____ Date _____

Powers of 10 Worksheet

Grade 5 · Common Core 5.NBT.A.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.

Practice

Builds the skill step by step.

1. What is the value of 10^3?

2. Write $10 \times 10 \times 10 \times 10$ as a power of 10.

3. $35 \times 100 = ?$

4. $4.2 \times 10 = ?$

5. $670 \div 10 = ?$

6. How many zeros does 10^5 have when it is written as a whole number?

   A. 4

   B. 5

   C. 6

   D. 10

7. $8 \times 10^2 = ?$

8. $3.6 \times 100 = ?$

9. $52 \div 100 = ?$

10. $0.7 \times 1{,}000 = ?$

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On Level

Grade-level practice.

1. $6.25 \times 10^2 = ?$

2. $48 \div 10^3 = ?$

3. Which is equal to 2.7×10^3?

   A. 2,700

   B. 270

   C. 27,000

   D. 0.0027

4. Write 100,000 as a power of 10.

5. $0.09 \times 10^2 = ?$

6. $4.5 \times 10^n = 4{,}500$. What is n?

7. Why is 3.2×100 equal to 320?

   A. You add two zeros to the end: 3.200.

   B. Each digit moves one place to the left.

   C. Each digit moves two places to the left, because $100 = 10 \times 10$.

   D. You multiply only the 2 by 100.

8. $750 \div 10^2 = ?$

9. A box holds 10^2 paper clips. How many paper clips are in 30 boxes?

10. $1.08 \times 1{,}000 = ?$

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Challenge

Multi-step and word problems that stretch it.

1. $0.6 \times 10^4 = ?$

2. $0.25 \times 10^n = 250$. What is n?

3. Which expression has the greatest value?

   A. 0.5×10^3

   B. 6×10^2

   C. $7{,}000 \div 10^2$

   D. 0.08×10^4

4. A grain of rice weighs about 0.025 gram. About how much do 10^3 grains weigh?

5. $360 \div 10^4 = ?$

6. Ty says $4.5 \times 10^2 = 4.500$ because you add two zeros. What is the correct product?

   A. 450

   B. 4.500

   C. 45

   D. 4,500

7. $0.73 \times ___ = 730$. Write the missing number as a power of 10.

8. A meter is 10^2 centimeters. How many centimeters are in 4.5 meters?

9. Find the value: $(3 \times 10^3) + (4 \times 10^2) + (6 \times 10)$

10. 10^5 is how many times as large as 10^2?