

Name _____

Date _____

1. Write the following in exponential form (e.g., $100 = 10^2$).

a. $1000 =$ _____

d. $100 \times 10 =$ _____

b. $10 \times 10 =$ _____

e. $1,000,000 =$ _____

c. $100,000 =$ _____

f. $10,000 \times 10 =$ _____

2. Write the following in standard form (e.g., $4 \times 10^2 = 400$).

a. $4 \times 10^3 =$ _____

e. $6.072 \times 10^3 =$ _____

b. $64 \times 10^4 =$ _____

f. $60.72 \times 10^4 =$ _____

c. $5,300 \div 10^2 =$ _____

g. $948 \div 10^3 =$ _____

d. $5,300,000 \div 10^3 =$ _____

h. $9.4 \div 10^2 =$ _____

3. Complete the patterns.

a. 0.02 0.2 _____ 20 _____ _____

b. 3,400,000 34,000 _____ 3.4 _____

c. _____ 8,570 _____ 85.7 8.57 _____

d. 444 4440 44,400 _____ _____ _____

e. _____ 9.5 950 95,000 _____ _____

4. After a lesson on exponents, Tia went home and said to her mom, “I learned that 10^4 is the same as 40,000.” She has made a mistake in her thinking. Use words, numbers, or a place value chart to help Tia correct her mistake.

5. Solve $247 \div 10^2$ and 247×10^2 .

a. What is different about the two answers? Use words, numbers, or pictures to explain how the digits shift.

b. Based on the answers from the pair of expressions above, solve $247 \div 10^3$ and 247×10^3 .

Answer Key

1.
 - a. 10^3
 - b. 10^2
 - c. 10^5
 - d. 10^3
 - e. 10^6
 - f. 10^5
2.
 - a. 4,000
 - b. 640,000
 - c. 53
 - d. 5,300
 - e. 6,072
 - f. 607,200
 - g. 0.948
 - h. 0.094
3.
 - a. 2; 200; 2000
 - b. 340; 0.034
 - c. 85,700; 857; 0.857
 - d. 444,000; 4,440,000; 44,400,000
 - e. 0.095; 9,500,000; 950,000,000
4. Answers will vary; $10^4 = 10 \times 10 \times 10 \times 10 = 10,000$
5.
 - a. Answers will vary.
 - b. $247 \div 10^3 = 0.247$; $247 \times 10^3 = 247,000$