Name _____ Date _____

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

   a. 1000 = _____

   b. 10 × 10 = _____

   c. 100,000 = _____

   d. 100 × 10 = _____

   e. 1,000,000 = _____

   f. 10,000 × 10 = _____

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

   a. 4×10^3 = _____

   b. 64×10^4 = _____

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

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

   e. 6.072×10^3 = _____

   f. 60.72×10^4 = _____

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

   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.