Do You Understand?

1. **Reasoning** Why are there three zeros in the product of $6 \times 10^3$?

2. Susan said that $10^5$ is 50. What mistake did Susan make? What is the correct answer?

Do You Know How?

In 3 and 4, complete the pattern.

3. $10^1 = \\
   10^2 = \\
   10^3 = \\
   10^4 = \\

4. $7 \times 10^1 = \\
   7 \times 10^2 = \\
   7 \times 10^3 = \\
   7 \times 10^4 = \\

Independent Practice

In 5–15, find each product. Use patterns to help.

5. $3 \times 10^1 = \\
   3 \times 10^2 = \\
   3 \times 10^3 = \\
   3 \times 10^4 = \\

6. $2 \times 10 = \\
   2 \times 100 = \\
   2 \times 1,000 = \\
   2 \times 10,000 = \\

7. $9 \times 10^1 = \\
   9 \times 10^2 = \\
   9 \times 10^3 = \\
   9 \times 10^4 = \\

8. $8 \times 10^4$

9. $4 \times 1,000$

10. $5 \times 10^2$

11. $6 \times 10,000$

12. $4 \times 10^1$

13. $100 \times 9$

14. $10^3 \times 6$

15. $8 \times 10^5$

16. Write $10 \times 10 \times 10 \times 10 \times 10 \times 10$ with an exponent. Explain how you decided what exponent to write.
17. One box of printer paper has $3 \times 10^2$ sheets of paper. Another box has $10^3$ sheets of paper. What is the total number of sheets in both boxes?

18. **Make Sense and Persevere** A post is put every 6 feet along a fence around a rectangular field that is 42 ft long and 36 ft wide. How many posts are needed?

19. **Number Sense** A company had $9 \times 10^6$ dollars in sales last year. Explain how to find the product $9 \times 10^6$.

20. An aquarium has the same shape as the solid figure shown below. What is the name of this solid figure?

![Solid Figure]

21. **Model with Math** Isaac takes 5 minutes to ride his bike down the hill to school and 10 minutes to ride up the hill from school. He attends school Monday through Friday. How many minutes does he spend biking to and from school in two weeks? Write an equation to model your work.

22. **Higher Order Thinking** Santiago hopes to buy a 4-horse trailer for about $12,000. Describe all the numbers that when rounded to the nearest hundred are 12,000.

23. Choose all the equations that are true.

- $10 \times 10 \times 10 \times 10 = 40$
- $10 \times 10 \times 10 \times 10 = 10^4$
- $10 \times 10 \times 10 \times 10 = 1,000$
- $10 \times 10 \times 10 \times 10 = 10,000$
- $10 \times 10 \times 10 \times 10 = 4 \times 10^4$

24. Choose all the equations that are true.

- $6 \times 10^5 = 6 \times 100,000$
- $6 \times 10^5 = 6 \times 10,000$
- $6 \times 10^5 = 600,000$
- $6 \times 10^5 = 60,000$
- $6 \times 10^5 = 650,000$