Name _____

Exponents

It's Algebra!

An **exponent** tells how many times a number is used as a factor. In $10^3 = 1,000$, 10 is called the **base** and 3 is called the **exponent**, or **power** of ten.

Number		Factored Form		Exponent Form
10	=	10	=	10^1
100	=	10×10	=	10^2
1,000	=	$10 \times 10 \times 10$	=	10^3
10,000	=	$10 \times 10 \times 10 \times 10$	=	10^4
100,000	=	$10 \times 10 \times 10 \times 10 \times 10$	=	10^5

Complete the following:

Number	Factored Form	Exponent Form	Power of 2
2	2	2^1	first
4	2×2	2^2	second
8	$2 \times 2 \times 2$	2^3	third
16	$2 \times 2 \times 2 \times 2$	_____	_____
32	$2 \times 2 \times 2 \times 2 \times 2$	_____	_____

The second power of a number is called the number **squared**. The third power of a number is called the number **cubed**. We can write standard numbers in exponent form.

$$400 = 4 \times 100 = 4 \times 10 \times 10 = 4 \times 10^2$$

$$7,000 = 7 \times 1,000 = 7 \times 10 \times 10 \times 10 = 7 \times 10^3$$

$$60,000 = 6 \times \rule{2cm}{0.4pt} = 6 \times \rule{1cm}{0.4pt} \times \rule{1cm}{0.4pt} \times \rule{1cm}{0.4pt} \times \rule{1cm}{0.4pt} = \rule{2cm}{0.4pt}$$

Getting Started

Write in exponent form.

1. $4 \times 4 =$ _____

2. the third power of 2 _____

3. 6 squared = _____

4. $5 \times 5 \times 5 \times 5 \times 5 =$ _____

5. 9 cubed = _____

6. the fourth power of 6 = _____

7. $3 \times 3 \times 3 \times 3 =$ _____

Write as standard numbers.

8. $3^3 =$ _____

9. $8^2 =$ _____

10. $7 \times 10^4 =$ _____

11. $6 \times 10 \times 10 =$ _____

12. $10 \times 10 \times 10 \times 10 =$ _____

13. $4 \times 4 \times 4 =$ _____

LIVEWORKSHEETS

Practice

Write in exponent form.

1. $2 \times 2 \times 2 =$ _____

2. 3×3 _____

3. $5 \times 5 \times 5 =$ _____

4. $7 \times 7 =$ _____

5. $8 \times 8 \times 8$ _____

6. $10 \times 10 \times 10 =$ _____

7. $2 \times 2 \times 2 \times 2 =$ _____

8. 7 squared _____

9. 3 cubed $=$ _____

10. $4 \times 4 \times 4 \times 4 =$ _____

11. the fifth power of $10 =$ _____

12. the second power of $9 =$ _____

13. $6 \times 6 \times 6 \times 6 \times 6 =$ _____

Write as standard numbers.

14. $2^3 =$ _____

15. 4×10^3 _____

16. $3 \times 3 \times 3 =$ _____

17. $5^2 =$ _____

18. $3 \times 10 \times 10$ _____

19. $5 \times 10^3 =$ _____

20. $8^2 =$ _____

21. 3×10^1 _____

22. $9^2 =$ _____

23. $8 \times 10^3 =$ _____

24. 5×10^4 _____

25. $2 \times 10^2 =$ _____