

Understanding Exponents

An exponent tells us to multiply the base by itself that number of times.

$$\begin{array}{ccccccc} \text{Base} & \text{---} & 3^2 & = & 3 \times 3 \times 3 & = & 27 \\ & & | & & | & & | \\ & & \text{Exponent: How many} & & \text{Expanded} & & \text{Value} \\ & & \text{times to multiply the} & & \text{Form} & & \\ & & \text{base by itself} & & & & \end{array}$$

- 1 Fill in the table using the first row as an example.

	Base	Exponent	Expanded	Value
5^2	5	2	5×5	25
8^2				
3^3				
2^4				

- 2 Rewrite the following expressions using exponents.

7×7 _____

$4 \times 4 \times 4 \times 4$ _____

$12 \times 12 \times 12 \times 12$ _____

$\frac{2}{5} \times \frac{2}{5} \times \frac{2}{5}$ _____

- 3 Solve the following problems.

$6^2 + 2^3 =$ _____

$7^2 + 3^3 =$ _____

$2^4 - 2^2 =$ _____

$10^3 - 8^2 =$ _____

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- 1 Fill in the table using the first row as an example.

	Base	Exponent	Expanded	Value
5^2	5	2	5×5	25
8^2	8	2	8×8	64
3^3	3	3	$3 \times 3 \times 3$	27
2^4	2	4	$2 \times 2 \times 2 \times 2$	16

- 2 Rewrite the following expressions using exponents.

$$7 \times 7 \quad \underline{7^2} \qquad 4 \times 4 \times 4 \times 4 \quad \underline{4^4}$$

$$12 \times 12 \times 12 \times 12 \quad \underline{12^4} \qquad \frac{2}{5} \times \frac{2}{5} \times \frac{2}{5} \quad \underline{\left(\frac{2}{5}\right)^3}$$

- 3 Solve the following problems.

$$6^2 + 2^3 = \underline{44} \qquad 7^2 + 3^3 = \underline{76}$$

$$2^4 - 2^2 = \underline{12} \qquad 10^3 - 8^2 = \underline{936}$$