Learning Objective: Students will be able to use formal language to describe a power and look at the specific case of perfect squares.

Warm Up

$6\overline{)1008}$ $8\overline{)6200}$ $2\overline{)662}$ $4\overline{)1312}$ $3\overline{)2277}$

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Warm Up Answers

$$\begin{array}{r} 168 \\ 6\overline{)1008} \end{array} \qquad \begin{array}{r} 775 \\ 8\overline{)6200} \end{array} \qquad \begin{array}{r} 331 \\ 2\overline{)662} \end{array} \qquad \begin{array}{r} 328 \\ 4\overline{)1312} \end{array} \qquad \begin{array}{r} 759 \\ 3\overline{)2277} \end{array}$$

Homework Answers

Good weekend?

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Lesson 1.2

September 8, 9,7, & 12, 2016

Essential Question How can you use repeated factors in real-life situations?

Lesson 1.2

September 8, 9,7, & 12, 2016

Lesson Objective:

Students will be able to:

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Learning Objective: Students will be able to use formal language to describe a power and look at the specific case of perfect squares.

Self-Evaluation Scale

Score	Description
4	I can teach other students how to use formal language to describe a power and look at the specific case of perfect squares.
3	I can use formal language to describe a power and look at the specific case of perfect squares.
2	I recognize, but still need help to use formal language to describe a power and look at the specific case of perfect squares.
1	I do not know how to use formal language to describe a power and look at the specific case of perfect squares.

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Activity 1, 2, & 3

With a partner, work on Activity 1, 2, & 3 on pages 10, 11, & 12 of your Big Ideas Text Book.

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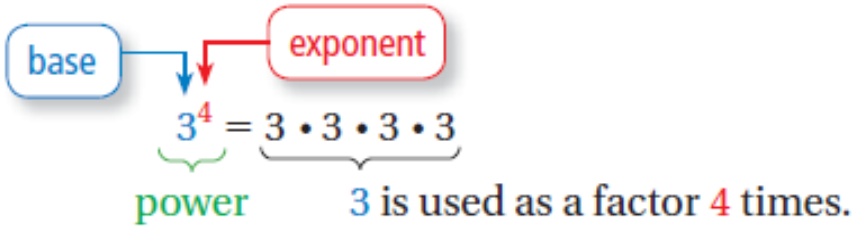
A **power** is a product of repeated factors. The **base** of a power is the repeated factor. The **exponent** of a power indicates the number of times the base is used as a factor.



Power	Words
3^2	Three *squared*, or three to the second
3^3	Three *cubed*, or three to the third
3^4	Three to the fourth

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1 Writing Expressions as Powers

Write each product as a power.

a. $4 \cdot 4 \cdot 4 \cdot 4 \cdot 4$

Because 4 is used as a factor 5 times, its exponent is 5.

∴ So, $4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 = 4^5$.

b. $12 \times 12 \times 12$

Because 12 is used as a factor 3 times, its exponent is 3.

∴ So, $12 \times 12 \times 12 = 12^3$.

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On Your Own

Write the product as a power.

1. $6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6$

2. $15 \times 15 \times 15 \times 15$

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2 Finding Values of Powers

Find the value of each power.

a. 7^2

$7^2 = 7 \cdot 7$ Write as repeated multiplication.

$= 49$ Simplify.

b. 5^3

$5^3 = 5 \cdot 5 \cdot 5$

$= 125$

The square of a whole number is a **perfect square**.

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3 Identifying Perfect Squares

Determine whether each number is a perfect square.

a. 64

Because $8^2 = 64$, 64 is a perfect square.

b. 20

No whole number squared equals 20. So, 20 is not a perfect square.

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On Your Own

Find the value of the power.

3. 6^3 **4.** 9^2 **5.** 3^4 **6.** 18^2

Determine whether the number is a perfect square.

7. 25 **8.** 2 **9.** 99 **10.** 100

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Assignment

Complete problems 4, 5, 14, 15, 25, 26, 36, 37, & 38 on pages 14 & 15 in your Big Ideas Text Book.

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Homework

Worksheet 1.1 Practice B