

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

$$6\overline{)1486}$$

$$8\overline{)8006}$$

$$8\overline{)4106}$$

$$1\overline{)7080}$$

$$5\overline{)1825}$$

$$6\overline{)9309}$$

$$9\overline{)1876}$$

$$9\overline{)2061}$$

$$9\overline{)5731}$$

$$7\overline{)3636}$$

$$6\overline{)4681}$$

$$1\overline{)2216}$$

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Warm Up Answers

$$\begin{array}{r} 247R4 \\ 6 \overline{)1486} \end{array}$$

$$\begin{array}{r} 1000R6 \\ 8 \overline{)8006} \end{array}$$

$$\begin{array}{r} 513R2 \\ 8 \overline{)4106} \end{array}$$

$$\begin{array}{r} 7080R0 \\ 1 \overline{)7080} \end{array}$$

$$\begin{array}{r} 365R0 \\ 5 \overline{)1825} \end{array}$$

$$\begin{array}{r} 1551R3 \\ 6 \overline{)9309} \end{array}$$

$$\begin{array}{r} 208R4 \\ 9 \overline{)1876} \end{array}$$

$$\begin{array}{r} 229R0 \\ 9 \overline{)2061} \end{array}$$

$$\begin{array}{r} 636R7 \\ 9 \overline{)5731} \end{array}$$

$$\begin{array}{r} 519R3 \\ 7 \overline{)3636} \end{array}$$

$$\begin{array}{r} 780R1 \\ 6 \overline{)4681} \end{array}$$

$$\begin{array}{r} 2216R0 \\ 1 \overline{)2216} \end{array}$$

Homework Answers

Find the value of the expression. Use estimation to check your answer.

1. $5947 + 2001$

7948

2.
$$\begin{array}{r} 2587 \\ + 1654 \\ \hline \end{array}$$

4241

3. $5684 + 3118$

8802

4. $1596 - 302$

1294

5. $9564 - 7581$

1983

6.
$$\begin{array}{r} 7094 \\ - 989 \\ \hline \end{array}$$

6105

7. $851 \div 37$

23

8.
$$\frac{612}{68}$$

9

9. $8970 \div 345$

26

10.
$$\frac{5424}{52}$$

104 R16 or
 $104\frac{4}{13}$

11. $8549 \div 198$

43 R35 or
 $43\frac{35}{198}$

12. $74,386 \div 874$

85 R96 or
 $85\frac{48}{437}$

13. Your family is traveling 345 miles to an amusement park. You have already traveled 131 miles. How many more miles must you travel to the amusement park?

214 miles

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Lesson 1.2

September 7 & 8, 2016

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

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Self-Evaluation Scale

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

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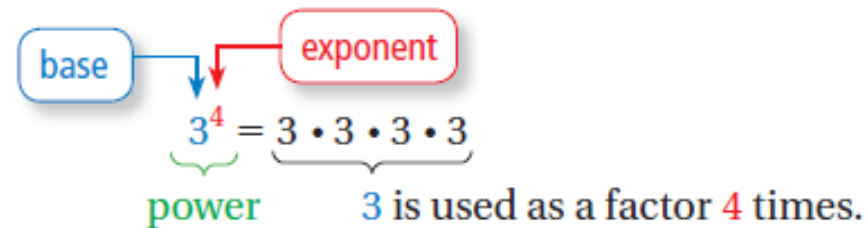
Activity 1, 2, & 3

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

September 8, 2016 Lesson 1.2

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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 <i>squared</i> , or three to the second
3^3	Three <i>cubed</i> , 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

$$7^2 = 7 \cdot 7$$

$$= 49$$

Write as repeated multiplication.

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 I.I Practice A