

[LearningObjective](#): Students will be able to use formal language to describe a power and look at the specific case of perfect squares.

# WarmUp

$$56 \overline{)2968}$$

$$94 \overline{)3854}$$

$$84 \overline{)8232}$$

$$33 \overline{)792}$$

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## WarmUpAnswers

$$\begin{array}{r} \phantom{0}^3 \\ 56 \\ \times 5 \\ \hline 280 \\ \phantom{0}^1 \\ 56 \\ \times 3 \\ \hline 168 \end{array}$$

$$\begin{array}{r} \phantom{00}^53 \\ 56 \overline{)2968} \\ \underline{280} \phantom{0} \\ 168 \\ \underline{168} \\ 0 \end{array}$$

$$\begin{array}{r} \phantom{00}^41 \\ 94 \overline{)3854} \end{array}$$

$$\begin{array}{r} \phantom{0}^3 \\ 84 \\ \times 9 \\ \hline 756 \\ \phantom{0}^3 \\ 84 \\ \times 8 \\ \hline 672 \end{array}$$

$$\begin{array}{r} \phantom{00}^98 \\ 84 \overline{)8352} \\ \underline{756} \phantom{0} \\ 672 \\ \underline{672} \\ 0 \end{array}$$

$$\begin{array}{r} \phantom{00}^24 \\ 33 \overline{)792} \end{array}$$

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# HomeworkAnswers

## 1.1 Record and Practice Journal

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

1.  $5947 + 2001$

**7948**

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

**4241**

3.  $5684 + 3118$

**8802**

4.  $1596 - 302$

**1294**

5.  $9564 - 7581$

**1983**

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

**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 9, 2014

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

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## Self-EvaluationScale

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 of your Big Ideas text book.

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# Homework

Name: \_\_\_\_\_ Date: \_\_\_\_\_

$$74 \overline{)5476}$$

$$66 \overline{)6270}$$

$$78 \overline{)6708}$$

$$98 \overline{)8624}$$

$$96 \overline{)2112}$$

$$43 \overline{)4085}$$

$$34 \overline{)1870}$$

$$42 \overline{)420}$$



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# HomeworkAnswers

$$74 \overline{)5476} \quad 74$$

$$66 \overline{)6270} \quad 95$$

$$78 \overline{)6708} \quad 86$$

$$98 \overline{)8624} \quad 88$$

$$96 \overline{)2112} \quad 22$$

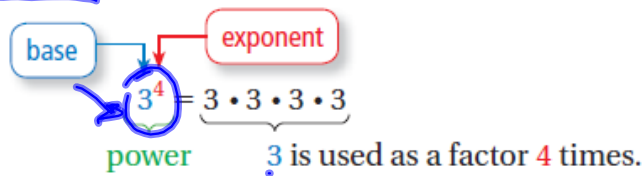
$$43 \overline{)4085} \quad 95$$

$$34 \overline{)1870} \quad 55$$

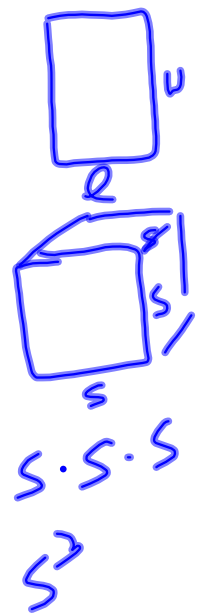
$$42 \overline{)420} \quad 10$$

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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



$$4^2$$

$$12^2$$

$$9^3$$

$$24^3$$

$$8^5$$

$$242,321^3$$

$$242,321 \cdot 242,321 \cdot 242,321$$

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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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## OnYourOwn

Write the product as a power.

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

$$6^6$$

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

$$15^4$$

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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**.

1, 4, 9, 16, 25, 36,  
49, 64, 81, 100

,



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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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## OnYourOwn

**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

$$\begin{array}{r} 3. \\ \overline{36} \\ 4 \\ 216 \end{array}$$
$$\begin{array}{r} 6^3 \\ 6 \cdot 6 \cdot 6 \\ 36 \cdot 6 \\ 216 \end{array}$$

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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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Lesson 1.2

September 5, 2014

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

Lesson 1.2

September 5, 2014

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use formal language to describe a power and look at the specific case of perfect squares.

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# Homework

## Worksheet 1.2 Pracce



