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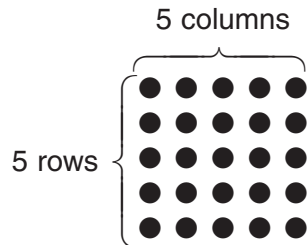
Square Numbers

A square array has the same number of rows and columns. The number it represents is called a **square number**.

This array shows $5 * 5 = 25$. 25 is a square number.

You can write a square number using exponents:

$$5 * 5 = 5^2 = 25$$



An exponent is a raised number that tells how many times the base number is used as a factor.

Practice

Draw a square array of dots for each of the first four square numbers. Write each number.

1.

2.

3.

4.

Write the square number that is the product of each number multiplied by itself.

5. 10 _____

6. 4 _____

7. 3 _____

8. 7 _____

9. 5 _____

10. 13 _____

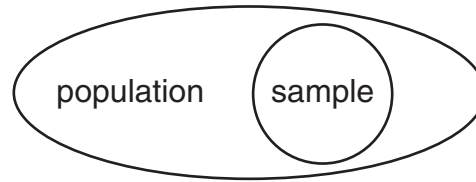
Write the exponential notation and the square number for each product.

	Product	Exponential Notation	Square Number
11.	$8 * 8$	_____	_____
12.	$11 * 11$	_____	_____
13.	$9 * 9$	_____	_____
14.	$6 * 6$	_____	_____
15.	$12 * 12$	_____	_____

Sample Size

A **sample** is a representative part of a larger population. A population might be “All fifth-graders,” and a sample might be “Fifth-graders in Mrs. Alden’s class.”

The larger the sample, the better it represents the population. So conclusions you draw are more accurate.



Practice

Investigate the question, “What is the most common vowel used in the English language?” Use the two samples below from the beginning of *Alice’s Adventures in Wonderland*.

Count the number of times each vowel occurs in this text. Make a frequency chart and draw a conclusion.

1. Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, ‘and what is the use of a book,’ thought Alice, ‘without pictures or conversation?’

Vowel	Frequency
<i>a</i>	
<i>e</i>	
<i>i</i>	
<i>o</i>	
<i>u</i>	

Conclusion: _____

Count the number of times the vowels occur in this second part of the text. Add the results from above to find the total for each vowel and draw a new conclusion.

2. So she was considering in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid) whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her.

Vowel	Frequency	Total
<i>a</i>		
<i>e</i>		
<i>i</i>		
<i>o</i>		
<i>u</i>		

Conclusion: _____

The most common vowel used in the English language is *e*. Explain how your conclusions support or do not support this fact.

3. _____
