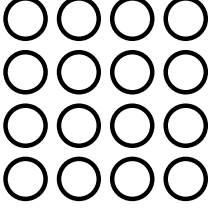


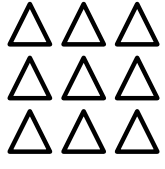
EXPONENTS

Represent the area of each model in mathematical terms.

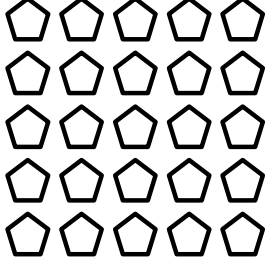
MODEL A



MODEL B



MODEL C



BASE

EXPONENT

- The base is the number being _____ by itself.
Ex: 9^2 : _____ is the base; 6^4 : _____ is the base
- The exponent determines the number of times the base is multiplied by _____.
Ex: 3^5 : _____ is the exponent; 2^7 : _____ is the exponent
- Any number raised to the 2nd power is said to be _____.
- Any number raised to the 3rd power is said to be _____.

Use each term below to determine the base and the exponent.

3^4

7^3

9^2

8^9

12^0

base: _____ base: _____ base: _____ base: _____ base: _____

exponent: _____ exponent: _____ exponent: _____ exponent: _____ exponent: _____

Complete the missing values in the tables below.

TERM	BASE	EXPONENT
	5	3
19^2		
	11	4

TERM	BASE	EXPONENT
16^4		
	7	6
	4	11

EXPANDED FORM

- Expanded form shows the full multiplication of the base.

Ex: 6^3 is written as _____

3^6 is written as _____

STANDARD FORM

- When a number is raised to a power, or when the number is simplified, then it is called _____ form.

Complete the missing values in the table below.

EXPONENT FORM	EXPANDED FORM	STANDARD FORM
	$5 \cdot 5 \cdot 5$	
		36
7^3		
9^1		
4^3		
	$3 \cdot 3 \cdot 3 \cdot 3$	
	$2 \cdot 2 \cdot 5 \cdot 5$	
	$3 \cdot 3 \cdot 6 \cdot 6$	

Use your understanding of exponents to answer the question below.

1. Six students were asked to write an expression that represents 576. Determine which students completed the task correctly and find the mistakes made by the other students.

GRACE

$$3 \cdot 3 \cdot 4 \cdot 4 \cdot 4$$

DOMINGO

$$3^3 \cdot 4^2$$

PENNY

$$3 + 3 + 4 + 4 + 4$$

PATEL

$$3^2 \cdot 4^3$$

FERN

$$3^2 + 4^3$$

THEA

$$576^1$$

Summarize today's lesson:

EXPONENTS

Draw a line from each exponent form to the corresponding expanded form and standard form.

EXPONENT FORM	EXPANDED FORM	STANDARD FORM
1. $3^4 \cdot 7^2$	$3 \cdot 3 \cdot 3 \cdot 7 \cdot 7 \cdot 7$	3,969
2. $2^3 \cdot 3^2$	$5 \cdot 5 \cdot 5 \cdot 7$	9,261
3. $5^3 \cdot 7^1$	$3 \cdot 3 \cdot 3 \cdot 3 \cdot 7 \cdot 7$	648
4. $9^2 \cdot 2^3$	$2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$	875
5. $7^3 \cdot 3^3$	$2 \cdot 2 \cdot 2 \cdot 9 \cdot 9$	72

Use your understanding of exponents to answer the questions below.

6. Which of the following does not represent the value 216? A. $36 \cdot 6$ B. 6^3 C. 3^6 D. $6 \cdot 6 \cdot 6$	7. Which of the following does not represent $3^2 \cdot 4^4$? A. $9 \cdot 256$ B. $3 \cdot 3 \cdot 4 \cdot 4 \cdot 4 \cdot 4$ C. 7^6 D. 2,304
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8. Tensley solved three different problems on her math test. Circle the problem she solved incorrectly. Explain her error and find the correct answer.

Simplify 8^3
 $8 \cdot 8 \cdot 8$
512

Simplify $1^3 \cdot 5^2$
 $3 \cdot 25$
75

Simplify $5^3 \cdot 7$
 $125 \cdot 7$
875