

Warm Up

Week 12

$$1. \frac{3^{-8} \cdot 3^6}{3^2} = \frac{3^{-2}}{3^2} = \frac{3^{-4}}{1} = \frac{1}{3^4} = \frac{1}{81}$$

$$2. \frac{(r^3)^2}{(r^3)^4} \cdot r^2 = \frac{r^6}{r^{12}} \cdot \frac{1}{r^1} = \frac{r^{-8}}{r^{12}} = \frac{1}{r^4}$$

Homework Questions?

Self Scoring Scale

4- I can *summarize* the concepts and explain it to others.

3- I can *apply* the concepts to answer questions correctly.

2- I can *apply* the concepts but with some *mistakes*.

1- I *need help* to know how to apply the concepts.

0- I *can't* apply the concepts even with help.

8.4 Quiz

26 Total

8.5 Scientific Notation

Goals: • Read and write numbers in scientific notation.

EQ: When power is positive, do you add zeros to the left or right?

The Unit Organizer		NAME	DATE
④ BIGGER PICTURE		Mo/Date/Year	
← Algebra 1.5 Concepts →			
② LAST UNIT/Experience Systems	① CURRENT UNIT Exponents & Exponential Functions	③ NEXT UNIT/Experience Quadratics	
⑧ Student Activities or Assignments	⑤ UNIT MAP		
8.1 8.2 8.3 8.4 8.5 8.6 8.7			
⑦ UNIT SELF-TEST QUESTIONS	1. What properties can be used to simplify & evaluate exponential expressions? 2. What do exponential graphs look like? 3. Can you write numbers in both decimal form and in scientific notation? 4. How can exponential growth and decay equations be used to represent and solve real world problems?		⑥ UNIT RELATIONSHIPS
	Simplify Graph Apply Represent		

Vocabulary

Scientific notation:

$$C \times 10^n$$

↑
 single digit

← integer

+ power →
 - power ←

Example 1: Write Numbers in Decimal Form

Write the number in decimal form.

a. $3.69 \times 10^1 =$

36.9

b. $7.3 \times 10^4 =$

73,000

c. $9 \times 10^{-2} =$

.09

d. $4.5 \times 10^{-3} =$

0.0045

Try It Write the number in decimal form.

1. 2.49×10^5

249 000

2. 5.6×10^{-4}

0.00056

0.00056

0.00056

3. 1.0001×10^4

10 001

Example 2: Write Numbers in Scientific Notation

Write the number in scientific notation.

a. $618 = 6.18 \times 10^2$

b. $2.5 = 2.5 \times 10^0$

c. $0.0098 = 9.8 \times 10^{-3}$

Try It Write the number in scientific notation.

4. 0.006

$$6 \times 10^{-3}$$

5. 82,000,000

$$8.2 \times 10^7$$

6. 0.00037

$$3.7 \times 10^{-4}$$

Example 3: Operations with Scientific Notation

Perform the indicated operation. Write the result in scientific notation.

a. $\frac{5.4 \times 10^{-2}}{7.2 \times 10^{-6}}$

-2+6

$$0.75 \times 10^4$$

$$7.5 \times 10^1 \times 10^4 = 7.5 \times 10^3$$

b. $(3.0 \times 10^{-4})^3 =$

$$3^3 \times 10^{-12}$$

$$27 \times 10^{-12} = 2.7 \times 10^1 \times 10^{-12} = 2.7 \times 10^{-11}$$

Summary

EQ: When power is positive, do you add zeros to the left or right?

1 digit
Before
Decim
pt

+ powers →
- powers ←

8.5 Homework

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