

Name \_\_\_\_\_

Date \_\_\_\_\_ Pd. \_\_\_\_\_

### Notes: Scientific Notation

#### Scientific Notation

A number is in scientific notation when it is in the form  $a \times 10^n$ , where  $a$  is a number between 1 and 10 and  $n$  is an integer.

*Example 1*

Express  $3.52 \times 10^4$  in standard notation.

*Example 2*

Express  $6.21 \times 10^{-5}$  in standard notation.

*Example 3*

Express 37,600,000 in scientific notation.

*Example 4*

Express 0.0000549 in scientific notation.

*Example 1*

Evaluate  $(6.7 \times 10^3)(2 \times 10^{-5})$ . Express the result in scientific and standard notation.

*Example 2*

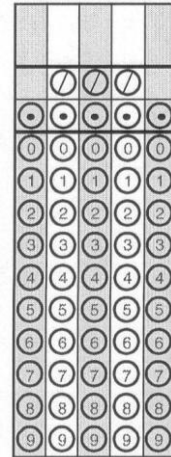
Evaluate  $\frac{1.5088 \times 10^8}{4.1 \times 10^5}$ . Express the result in scientific and standard notation.

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### Exit Card: Scientific Notation

Express the quotient  $\frac{2.4 \times 10^3}{1.2 \times 10^5}$  in standard notation.



#### ECR

The amount of money owed by the U.S. Government in January 2004 was approximately 7,032,000,000,000 dollars. The population of the U.S. in that month was approximately 293,000,000. (Source: U.S. Government)

Complete the following:

- Write these two numbers in scientific notation.
- If the amount of money is divided equally among each person in the U.S., how much would each person's share of this money be? Use your answers above and mathematics to explain your answer. Use words, symbols, or both in your answer.

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**Homework: Pages 428 – 430 (21, 22, 31, 33, 48, 51, 56, 58, 62, 68)**

<p>21. Express in standard notation: <math>8 \times 10^7</math></p>	<p>22. Express in standard notation: <math>1.243 \times 10^{-7}</math></p>
<p>31. Express in scientific notation. 34,402,000</p>	<p>33. Express in scientific notation. 0.00090465</p>
<p>48. Evaluate <math>(3.5 \times 10^7) (6.1 \times 10^{-8})</math></p>	<p>51. Evaluate <math>\frac{7.2 \times 10^3}{1.8 \times 10^7}</math></p>
<p>56. The usual growth rate of human hair is <math>3.3 \times 10^{-4}</math> meter per day. If an individual hair grew for ten years, how long would it be in meters (assume 365 days in a year)?</p>	

58. The table below lists the greatest yearly salary for a major league baseball player for selected years.

Year	Player	Yearly Salary
1979	Nolan Ryan	\$1 million
1982	George Foster	\$2.04 million
1990	Jose Canseco	\$4.7 million
1992	Ryne Sandberg	\$7.1 million
1996	Ken Griffey, Jr.	\$8.5 million
1997	Pedro Martinez	\$12.5 million
2000	Alex Rodriguez	\$25.2 million

Source: USA TODAY

About how many times as great was the yearly salary of Alex Rodriguez in 2000 as that of George Foster in 1982?

62. Which of the following is equivalent to  $360 \times 10^{-4}$ ?

A  $3.6 \times 10^3$       B  $3.6 \times 10^2$       C  $3.6 \times 10^{-2}$       D  $3.6 \times 10^{-3}$

68. Simplify  $\frac{49a^4b^7c^2}{7ab^4c^3}$