

# Guided Practice

## 5.7

NAME \_\_\_\_\_

Module 5    Decimal Operations, Exponents, and Powers  
Lesson 7    Scientific Notation

### Set 1

Write as a Power of 10.

1

1,000  
 $10^3$

2

0.0001  
 $10^{-4}$

Write in standard form.

3

$10^6$   
1,000,000

4

$10^{-8}$   
0.00000001

### Set 2

Write in standard form.

1

$102.5 \times 10^2$   
10,250

2

$1,087 \times 10^{-3}$   
1.087

3

Write 9.307 in expanded form.

| ones   | . | tenths    | hundredths | thousandths |
|--------|---|-----------|------------|-------------|
|        | . |           |            |             |
| $10^0$ | . | $10^{-1}$ | $10^{-2}$  | $10^{-3}$   |
| 9      | . | 3         | 0          | 7           |

$$9.307 = 9 \times 10^0 + 3 \times 10^{-1} + 0 \times 10^{-2} + 7 \times 10^{-3}$$

$$9.307 = 9 + 0.3 + 0.007$$

### Set 3

Tell whether the number is written in scientific notation.

1  $6.0 \times 10^4$   
Yes

2  $30 \times 10^5$   
No

### Set 4

1 Light travels at a speed of about 300,000 kilometers per second. Write the number 300,000 in scientific notation.

speed of light  
300,000 km/sec  
 $\overline{3.00000.}$   
1 2 3 4 5

$3 \times 10^5$  km/sec

2 The diameter of Saturn is approximately  $1.2 \times 10^5$  kilometers. Write  $1.2 \times 10^5$  in standard notation.

diameter of Saturn  
 $1.2 \times 10^5$  km  
 $\overline{1.20000.}$   
1 2 3 4 5

120,000 km

3 The diameter of the Sun is approximately  $1.4 \times 10^6$  kilometers. Write  $1.4 \times 10^6$  in standard notation.

diameter of the Sun  
 $1.4 \times 10^6$  km  
 $\overline{1.400000.}$   
1 2 3 4 5 6

1,400,000 km

NAME \_\_\_\_\_

**Module 5**    **Decimal Operations, Exponents, and Powers**  
**Lesson 7**    **Scientific Notation**



The wavelength of red light is 0.00000075 m. Write this number in scientific notation.

wavelength of red light

0.00000075 m

0.  $\underbrace{0}_{-7}$   $\underbrace{0}_{-6}$   $\underbrace{0}_{-5}$   $\underbrace{0}_{-4}$   $\underbrace{0}_{-3}$   $\underbrace{0}_{-2}$   $\underbrace{7}_{-1}$  .5

$7.5 \times 10^{-7}$  m



The mass of a dust particle is 0.000000000753 kilograms. Write this number in scientific notation.

mass of a dust particle

0.000 000 000 753 kg

0.  $\underbrace{0}_{-10}$   $\underbrace{0}_{-9}$   $\underbrace{0}_{-8}$   $\underbrace{0}_{-7}$   $\underbrace{0}_{-6}$   $\underbrace{0}_{-5}$   $\underbrace{0}_{-4}$   $\underbrace{0}_{-3}$   $\underbrace{0}_{-2}$   $\underbrace{7}_{-1}$  .53

$7.53 \times 10^{-10}$  kg



The radius of a hydrogen atom is  $2.5 \times 10^{-11}$  meters. Write this number in standard notation.

radius of a hydrogen atom

$2.5 \times 10^{-11}$  m

0.  $\underbrace{0}_{-11}$   $\underbrace{0}_{-10}$   $\underbrace{0}_{-9}$   $\underbrace{0}_{-8}$   $\underbrace{0}_{-7}$   $\underbrace{0}_{-6}$   $\underbrace{0}_{-5}$   $\underbrace{0}_{-4}$   $\underbrace{0}_{-3}$   $\underbrace{0}_{-2}$   $\underbrace{2}_{-1}$  .5

0.000000000025 m

