

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Score: \_\_\_\_\_ / \_\_\_\_\_ = \_\_\_\_\_ % = \_\_\_\_\_

## HW6-4: Applying Scientific Notation

Simplify. Write your answer using scientific notation.

1.  $(1.2 \times 10^9) + (7.77 \times 10^{12})$

2.  $(5.01 \times 10^{33}) - (4.1 \times 10^{31})$

3.  $(6.3 \times 10^{-31})(3.5 \times 10^{13})$

4.  $(2.21 \times 10^9) \div (2.6 \times 10^3)$

5.  $(6.52 \times 10^{-11}) + (8.08 \times 10^{-11})$

6.  $\frac{4.84 \times 10^{11}}{8.8 \times 10^4}$

Write your answers using scientific notation.

7. There are about  $6.022 \times 10^{23}$  atoms of hydrogen in a mole of hydrogen. How many hydrogen atoms are in  $3.5 \times 10^3$  moles of hydrogen?

8. The mass of Neptune is  $1.02 \times 10^{26}$  kg. The mass of Venus is  $4.87 \times 10^{24}$  kg. How much greater is the mass of Neptune than the mass of Venus?

9. New York County had a population of about  $1.54 \times 10^6$  people in 2000. Erie County has a population of about  $9.5 \times 10^5$  people. Find the combined population of New York and Erie Counties.

10. Find the population density of China if the population is  $1.332 \times 10^9$  people and the area of China is  $3.7 \times 10^6 \text{ mi}^2$ .

11. An album receives an award when it sells 10 000 000 copies. An album has already sold  $8.78 \times 10^6$  copies. How many more copies does it need to sell to receive the award?

12. The population of several European countries is found in the table. What is the total population of Italy, Germany and Hungary?

Country	Population
Germany	$8.13 \times 10^7$
France	$6.71 \times 10^7$
Italy	$6.07 \times 10^7$
Spain	$4.64 \times 10^7$
Hungary	$9.85 \times 10^6$

13. The total income for Georgia residents is  $\$2.4 \times 10^{11}$ . There are 10 million residents in the state of Georgia. What is the average income per person in the state of Georgia?

14. The table shows the surface temperature of five stars.

Star	Betelgeuse	Bellatrix	Sun	Aldebaran	Rigel
Surface Temperature ( $^{\circ}\text{F}$ )	$6.2 \times 10^3$	$3.8 \times 10^4$	$1.1 \times 10^4$	$7.2 \times 10^3$	$2.2 \times 10^4$

a. Which star has the highest surface temperature?

b. Which star has the lowest surface temperature?

15. The average mass of a grain of sand on a beach is about  $1.5 \times 10^{-5}$  g. There are about  $5.1 \times 10^{11}$  grains of sand in a beach volleyball court. What is the mass of grains of sand in the beach volleyball court?

16. The maximum length of a particle that can fit through a surgical mask is  $1 \times 10^{-4}$  mm. The average length of a dust mite is  $1.25 \times 10^{-1}$  mm. What is the difference between a dust mite and a particle that can fit through a surgical mask?