

Date: \_\_\_\_\_

## HW 7-5 Scientific Notation Word Problems

1. The particle of dust has a mass of  $7.53 \times 10^{-10}$  kilograms. Find the weight of 5 billion dust particles.
2. The distance from the sun to the Andromeda galaxy is  $1.2 \times 10^{19}$  miles. Light travels at a speed of  $5.88 \times 10^{12}$  miles per year (called a light-year). How long does it take light to travel from the sun to the Andromeda galaxy?
3. The mass of the sun is  $1.989 \times 10^{30}$  kilograms. The mass of the earth is  $5.98 \times 10^{24}$  kilograms. How many times bigger is the sun than the earth?
4. Total health care costs in the United States in 2003 was \$1.7 trillion. The U.S. population was 290.9 million. What was the average amount spent per person on health care?
5. The population of Mathville is  $5.6 \times 10^3$ . The population of Algeville is  $1.3 \times 10^4$ . How many more people are there in Algeville?

6. There are  $3.4 \times 10^9$  particles of dust per cubic meter. How many particles are there in a room that is 1200 cubic meters?

7. There are approximately  $3.1 \times 10^8$  people in the United States. If on average each person has  $4.1 \times 10^1$  coins lying around on dressers, in pockets, in cars, etc., how many total coins do all the people in the U.S. have?

8. By area, the former U.S.S.R. was the largest country, having  $8.649 \times 10^6$  square miles of land. At this time Canada was the second largest country in the world. Canada has  $4.797 \times 10^6$  square miles less area than the former U.S.S.R. How big is Canada in terms of land area?

9. If a computer can perform an addition operation in  $1.5 \times 10^{-6}$  seconds, in how much time can it perform 1500 addition operations?