

Multiplying and Dividing Word Problems Using Scientific Notation

Directions:

Work out the following problems on YOUR OWN PAPER then STAPLE your answers to this paper!

Write ALL of your answers in scientific notation!

Circle your final answer.

1. There are about 3,000,000,000,000,000 atoms in a milligram of gold.
 - a. How many atoms would there be in a gram of gold?
 - b. A kilogram of gold?

$$1000 \text{ milligrams} = 1 \text{ gram}$$

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2. The Earth travels around the Sun at a very fast rate (its orbit is about 584 million miles). If the Earth has existed for 4,600,000,000 years, what is the total distance it has traveled in its orbit?
3. If there is approximately 3,000,000,000 cubic kilometers of ice on Earth, then how many cubic meters of ice is there currently on Earth?
 $1 \text{ cubic kilometer} = 1,000,000,000 \text{ cubic meters.}$
4. There are fast cameras that can take at least 600 million pictures per second.
 - a. If the cameras could continuously operate at this speed, then how many pictures would they take in an hour?
 - b. What if they had been operating continuously since Earth had existed? How many pictures would they have taken?
5. If they average human breathes 15 times per minute...
 - a. What is the approximate number of breathes that *you* have take in your lifetime?
 - b. What about Luo Meizhen, the oldest woman on Earth, who lived for 127 years?



6. A swarm of locusts fly in large groups. One swarm flying across the Red Sea has been estimated to have 250,000,000,000 insects in an area of 2,000 square miles. Write each number in scientific notation and find out how many locusts would have been found in each square mile (assuming they are distributed evenly)?
7. The sun contains about 1×10^{57} atoms and the volume of the sun is about 8.5×10^{31} cubic inches. How many atoms would you expect to find in 1 cubic inch of the sun?
8. Below is an image of the world's largest tree by volume, the "General Sherman." It weighs about 4,000,000 pounds and grew from a seed that weighed .0001 of a pound. How many times is the tree now then it was as a seed?

