

Scientific Notation Word Problems

Show all work as you solve the problems. **All final answer must be in correct scientific notation form.**

1. Suppose there are 5×10^6 bacteria in every liter of water. How many bacteria are there in 12 liters of water?
2. A TV show had 3.5×10^6 viewers for their first episode and 8.5×10^6 viewers for their second episode. How many viewers did they have overall?
3. In 2013 the Los Angeles Dodgers opening day payroll was about $\$2.16 \times 10^8$ and the Houston Astros opening day payroll was about $\$2.4 \times 10^7$. How much higher was the Dodgers' payroll?
4. The population of the United States is 3×10^8 and the population of the world is 7×10^9 . How many times larger is the population of the world than the U.S.?
5. The population of Mathville is 8.4×10^3 . The population of Algeville is 1.3×10^4 . How many more people are there in Algeville?
6. If the speed of light is 3×10^8 meters/second, how many seconds does it take light to reach the Earth, if the sun is 1.5×10^{11} meters from Earth?

7. A factory that has 6×10^3 workers makes 2.4×10^5 products each day. What is the average amount of products made per worker?
8. In the US, the amount of electricity generated by coal in 2008 was 1.8×10^{12} kWh and 9×10^{11} kWh in 2020. What was the decrease over those 12 years?
9. The volume of Lake Rason is approximately 2.56×10^5 km³. Lake Rushton is 25 times the volume of Lake Rason. What is the volume of Lake Rushton?
10. The speed of light in cold air is approximately 3×10^8 meters/sec. The speed of sound in cold air is approximately 3×10^2 meters/sec. The speed of light in cold air is how many times the speed of sound in cold air?
11. There are approximately 3.1×10^8 people in the United States. If on average each person has 4.1×10^1 coins lying around on dressers, in pockets, in cars, etc., how many total coins do all the people in the U.S. have?
12. The SR-71 "Blackbird" is one of the world's fastest airplanes. It is capable of traveling at a cruising speed of Mach 3, or three times the speed of sound. The speed of sound is approximately 7.67×10^2 miles per hour. What is Mach 3 in miles per hour?