

Name _____

Mrs. Roubos

Date _____

8R Period _____

Scientific Notation Word Problems

I. Key words and phrases:

| Key Words | What you do |
|--|-------------|
| How many times | |
| How much more/many more/much longer/much shorter | |
| In total/combined | |
| Which is larger/smaller/longer/shorter | |
| Times | |
| Scientific Notation | |
| Standard Form | |

II. Examples:

1) The diameter of the nucleus of a hydrogen atom is about 1×10^{-14} meters. The diameter of the entire atom is 1×10^4 times that size. What is the approximate diameter of a hydrogen atom expressed in scientific notation?

2) In 2010, the population of Austria was about 8.397×10^6 . The population of Switzerland was about 7.783×10^6 . About how much more was the population of Austria than Switzerland?

3) The speed of light is 1.86×10^5 miles per second. What is this number in standard notation?

4) The population of a small country is 5,740,000. Express this number using scientific notation.

5) In astronomy, the immense distances between celestial bodies are measured in light-years, the distance that light can travel in one year. One light year is approximately 5,880,000,000,000 miles. If a star is 8.5 light years from Earth, approximately how many miles is it from Earth?

- a) 50.0×10^{12} mi
- b) 5.0×10^{13} mi
- c) 5.9×10^{12} mi
- d) 5.4×10^{13} mi

6) A very small dust particle has a diameter of about 0.004 inches. Most cells of living organisms have diameters of about 4×10^{-4} inches. Which is larger, the dust particle or the typical cell in a living organism?

7) (8.4×10^5) is how many times as great as (2.0×10^3) ?

8) What is the combined weight of (6.2×10^3) mg and (4.5×10^4) mg?

9) The length of your classroom is about 3.5×10^2 inches. If the hallway is ten times as long as the classroom, what is the length of the hallway, expressed in scientific notation?

10) In 2010, the population of the Dominican Republic was about 9.884×10^6 . The population of Haiti was about 1.009×10^7 . About how much more was the population of Haiti than the Dominican Republic?

11) (1.23×10^9) is how many times as great as (3×10^5) ?

12) What is 6,200,000,000 written in scientific notation?

13) A bookstore orders a shipment of books. The books weigh 3.2 lb each. How many will the shipment of 100 books weigh? Write your answer in scientific notation?

14) In 2011, the population of Canada was about 3.435×10^7 . The population of the United States was about 3.120×10^8 . What was the population in total of the two countries?

15) What is 4.5×10^{-3} in standard form?