

Name _____

Date _____

Mr. Tallman

Do Now**Multiply or Divide the following**

1) $5.2 \times 10^{-6}(1.1 \times 10^{-3})$

2) $\frac{4.25 \times 10^6}{1.7 \times 10^3}$

3) The area of the state of Colorado is about 1.04×10^5 square miles. The Indian Ocean covers about 2.808×10^7 square miles. How many times bigger is the Indian Ocean than the state of Colorado?

Lesson #49 – Adding and Subtracting Numbers in Scientific Notation

Just like multiplying and dividing numbers in scientific notation, we can use our calculators to add and subtract numbers in scientific notation.

Add or subtract the following.

1) $(6.72 \times 10^9) - (2.01 \times 10^9)$

2) $(4.076 \times 10^4) + (3.2 \times 10^4)$

3) $(2.03 \times 10^3) + (3.214 \times 10^4)$

4) $(6.15 \times 10^7) - (3.56 \times 10^5)$

5) The mass of Earth and Venus are listed below.

Earth: 5.9722×10^{24} kg

Venus: 4.8685×10^{24} kg

a) Determine the **total mass** of the two planets.

b) Determine the **difference** in the masses of the two planets.

6) The mass of Earth is 5.9×10^{24} kg. The mass of Pluto is 13,000,000,000,000,000,000 kg. What is the combined mass of Earth and Pluto?

7) The mass of Earth is approximately 5.9×10^{24} kg, and the mass of Venus is approximately 4.9×10^{24} kg. Find the difference in their masses.

8) The approximate densities of some chemical elements are shown in the table below.

What is the combined density of the gold and the silver? Write your answer in scientific notation.

DENSITY OF ELEMENTS

Element	Density (kilograms per cubic centimeter)
Calcium	1.5×10^{-3}
Gold	1.932×10^{-2}
Silver	1.05×10^{-2}
Sodium	9.71×10^{-4}

9) The distance from Earth to the Sun is approximately 93 million miles. A scientist would write this number as

- A) 93×10^7 B) 9.3×10^6 C) 93×10^{10} D) 9.3×10^7

10) If .0347 is written in scientific notation, 3.47×10^n , what is the value of n ?

- A) -2 B) -3 C) 2 D) 3

11) Which expression is equivalent to 6.02×10^{23} ?

- A) 602×10^{21} B) 60.2×10^{21} C) $.602 \times 10^{21}$ D) 62,000

(12 - 15) Evaluate. Answers must be in scientific notation.

12) $(7.4 \times 10^{15}) - (6.9 \times 10^{15})$ 13) $(4.29 \times 10^8) - (3 \times 10^5)$

14) $(8.9 \times 10^7) + (5.6 \times 10^7)$ 15) $(8.03 \times 10^{21}) + (5.1 \times 10^{20})$

16) The longest bone in the human body averages about 5.05×10^{-1} meters in length. The shortest bone averages about 2.8×10^{-3} meters. About how many times greater is the length of the longest bone than the shortest bone? Write your answer in standard form.

17) In 2014, the population of the United States was approximately 3.189×10^8 people. In that same year, the population of the United Kingdom was approximately 6.41×10^7 people. How much greater was the population of the United States than the population of the United Kingdom? Leave your answer in scientific notation.