Name_____Date_____8th Grade

Aim   How do we solve word problems involving scientific notation?

Warm up

Each of the following problems involves using one of the 4 operations. (+, −, ×, ÷)

Solve each problem and give your answer in both scientific notation and standard form.

1.   A corporation earned a profit of $2.5 × 10^4$ for $1 × 10^3$ days in a row. What was the corporation's total profit during this time period?

2.   In 2013 the Los Angeles Dodgers opening day payroll was about $2.16 × 10^8$ and the Houston Astros opening day payroll was about $2.4 × 10^7$. How much higher was the Dodgers' payroll?

3.   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?

4.   The population of Crowded Town is $4 × 10^6$ and the population of Empty Village is $8 × 10^3$. How many times the population of Empty Village is Crowded Town?

Group Work Questions

Solve each problem and give your answer in both scientific notation and standard form.

1. In 2012, New York City (NYC) and Los Angeles (LA) has the highest populations of any cities in the United States. NYC's population was about 8.1×10^6 and LA's population was about 3.8×10^6. What is the population of these two cities combined?

2. In 2012, the population of New York State (NY) was about 2×10^7 and the population of the State of Oregon (OR) was about 4×10^7.

    A. How many times the population of OR is NY?

    B. How many more people live in NY than OR?

3. The New York Knicks play in Madison Square Garden, the Los Angeles Lakers play in the Staples Center, and the Miami Heat play in American Airlines Arena. Madison Square Garden is about 2.8×10^3 miles from the Staples Center and Madison Square Garden is about 1.4×10^3 miles from AmericanAirlines Arena.

   A. How many times of the distance the Knicks travel to play the Heat is the distance the Knicks travel to play the Lakers?

   B. How much further is the Staples Center than American Airlines Arena from Madison Square Garden?

4. An airplane traveled 5.7×10^2 miles per hour for 1.4×10^1 hours. How far did the airplane travel?

Review

1.

Tyson Chandler	1.41×10^7
Iman Shumpert	1.7×10^6
Tim Hardaway Jr.	1.197×10^6
Carmelo Anthony	2.139×10^7

The table shows the 2013 salaries for four NY Knicks players. Order the players from highest salary to lowest salary.

2.   Circle the lower number: 2.1×10^{-8} 1.2×10^{-5}

3.   Write the following numbers in scientific notation:

   A.   62,000,000,000   **B.**   0.0000044

4.   *Multiply   (leave answer in scientific notation)*

   A. $(2.2 \times 10^{-4})(4 \times 10^{-3})$ **B.** $(3 \times 10^3)(8 \times 10^3)$

5.   *Divide   (leave answer in scientific notation)*

   A. $\dfrac{(8 \times 10^6)}{(4 \times 10^4)}$ **B.** $\dfrac{(6 \times 10^9)}{(2 \times 10^5)}$