

5. Which one does not belong? Prove your reasoning.

$14.28 \times 10^9$ ;  $(3.4 \times 10^6)(4.2 \times 10^3)$ ;  $1.4 \times 10^9$ ;  $(3.4)(4.2) \times 10^{(6+3)}$   
 $\downarrow$   $\downarrow$   $\uparrow$   $\downarrow$   
 $1.428 \times 10^{10}$   $14.28 \times 10^9$   $1.4 \times 10^9$   $14.28 \times 10^9$   
 $1.428 \times 10^{10}$   $1.428 \times 10^{10}$   $1.428 \times 10^{10}$

Does NOT Match.

6. Enrique is finding the *quotient* of  $6.63 \times 10^{-6}$  and  $5.1 \times 10^{-2}$ . Circle his mistake and correct it.

$$\frac{6.63 \times 10^{-6}}{5.1 \times 10^{-2}} = \left(\frac{6.63}{5.1}\right) \left(\frac{10^{-6}}{10^{-2}}\right)$$

$$= 1.3 \times 10^{-6 - (-2)}$$

$$= 1.3 \times 10^{-4}$$

check:  $-6 - (-2) = -4 \checkmark$

Enrique is Correct!  
There is no mistake! 😊

7. 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  $2.8 \times 10^3$  miles from the Staples Center and Madison Square Garden is about  $1.4 \times 10^3$  miles from American Airlines Arena. How many times of the distance the Knicks travel to play the Heat is the distance the Knicks travel to play the Lakers?

$$\frac{\text{Knicks} \rightarrow \text{Heat}}{\text{Knicks} \rightarrow \text{Lakers}} = \frac{1.4 \times 10^3}{2.8 \times 10^3} = 0.5 \times 10^0 = 0.5 \text{ times the distance (or } \frac{1}{2} \text{)}$$

8. An airplane traveled  $5.7 \times 10^2$  miles per hour for  $1.4 \times 10^1$  hours. How far did the airplane travel?

$$(5.7 \times 10^2)(1.4 \times 10^1) = 7.98 \times 10^3 \text{ miles}$$

7,980 miles

6. Factories A and B produced potato chips. Last year, each factory reported the amount of each ingredient. Factory A reported their amounts in scientific notation and Factory B reported their amounts in standard form.

Ingredient	Factory A (amount used in pounds)	Factory B (amount used in pounds)
Potato	$4.87 \times 10^6$	3,309,000
Oil	$5.61 \times 10^5$	356,000
Salt	$2.87 \times 10^5$	193,500

$3.56 \times 10^5$   
 $1.935 \times 10^5$

Show your work or explain, leave your answers in scientific notation.

a) Which factory used more oil last year? By how much?  
Subtract

Factory A.  
used  $2.05 \times 10^5$   
pounds more  
than Factory B.

$$(5.61 \times 10^5) - (3.56 \times 10^5)$$

$$2.05 \times 10^5$$

b) What is the total amount of salt used by both factories?  
Add

$$(2.87 \times 10^5) + (1.935 \times 10^5)$$

$4.805 \times 10^5$  pounds of salt  
were used in total.

c) What is the total weight of all the ingredients in Factory A?

$$(4.87 \times 10^6) + (5.61 \times 10^5)^{+1} + (2.87 \times 10^5)^{+1}$$

$$0.561 \times 10^6 \quad 0.287 \times 10^6$$

$5.718 \times 10^6$  pounds of  
ingredients were  
used in Factory A.