CW: 4.3.3 **Name:** _____

Dividing numbers in scientific notation

Review:

1. $\frac{10^5}{10^2} =$ 10^3

   $\frac{10 \cdot 10 \cdot 10 \cdot 10 \cdot 10}{10 \cdot 10}$

2. $\frac{10^9}{10^{-3}} =$ 10^{9+3} 10^{12}

3. $\frac{10^{-1}}{10^{-8}} =$ 10^7

   $\frac{10^8}{10^1}$ 10^{-1+8}

Dividing numbers in scientific notation:

$$\frac{x \bullet 10^a}{y \bullet 10^b} = \frac{x}{y} \bullet 10^{a-b}$$

Examples:

a. $\frac{8 \bullet 10^5}{4 \bullet 10^2} = \frac{8}{4} \bullet 10^{5-2} = 2 \bullet 10^3$

Is the answer written in scientific notation?

b. $\frac{6 \bullet 10^3}{2 \bullet 10^8} = \frac{6}{2} \bullet 10^{3-8} = 3 \bullet 10^{-5}$

Is the answer written in scientific notation?

c. $\frac{6.25 \bullet 10^4}{1.25 \bullet 10^5} = \frac{6.25}{1.25} \bullet 10^{4-5} =$ $5 \bullet 10^{-1}$

Is the answer written in scientific notation?

d. $\frac{8.1 \bullet 10^{-6}}{9 \bullet 10^{-10}} = \frac{8.1}{9} \bullet 10^{-6--10} = .9 \bullet 10^4$

Is the answer written in scientific notation?

9×10^3

Rewrite the following numbers into scientific notation:

e) **92.x 10^4** 9.2×10^5

f) **.78 x 10^6** 7.8×10^5

g) **215 x 10^3** 2.15×10^5

h) **16 x 10^{-4}** 1.6×10^{-3}

i) **.4 x 10^{-3}** 4×10^{-4}

j) **198 x 10^{-5}** 1.98×10^{-3}

Examples- continued

k) $\dfrac{2.5 \bullet 10^{8}}{4 \bullet 10^{3}} =$ 0.625×10^{5} 6.25×10^{4}

l) $\dfrac{1 \bullet 10^{-3}}{2.5 \bullet 10^{-7}} =$ $.4 \times 10^{4}$ 4×10^{3}