Simplifying & Regrouping:

Ex. 1: $(3\times10)(7\times10)$

$(3\cdot7)(10\cdot10)$

$21 \quad 100$

$=$

$$\begin{array}{r} 30 \\ \times\ 70 \\ \hline 00 \\ +2100 \\ \hline 2100 \end{array}$$

Ex. 2: $\dfrac{3\times4}{2\times9} = \dfrac{3}{9}\times\dfrac{4}{2} = \dfrac{1\cdot2}{3\cdot1} = \dfrac{2}{3}$

Evaluate. Write your answer in scientific notation.

Ex. 3: $(7.2\times10^3)(1.6\times10^4)$

$(7.2\cdot1.6)(10^3\cdot10^4)$

$11.52 \times 10^{7+1}$

1.152×10^8

BIG # → + exp
SMALL # → − exp

① Regroup (#)(10's)

② Multiply the #'s in 1st ( )

③ Find out how many 10's there are.

④ Put in sci. notation

Ex. 4: $(2.63\times10^4)(1.2\times10^{-3})$

$(2.63\cdot1.2)(10^4\cdot10^{-3})$

3.156×10^1

Side by Side = Add
$10^3\cdot10^4 = 10^7$

Notes 6-3

Int 2 **Multiplying & Dividing with Scientific Notation** **Unit 6**

Evaluate. Write your answer in scientific notation.

Ex. 5: $\dfrac{8.37\times10^{8}}{2.7\times10^{3}}$

$\dfrac{8.37}{2.7} \times \dfrac{10^{8}}{10^{3}}$

10s are stacked = Subtract

3.1×10^{5}

Ex. 6: $\dfrac{8.2\times10^{-5}}{9.3\times10^{8}}$

$\dfrac{8.2}{9.3} \quad \dfrac{10^{-5}}{10^{8}} = \dfrac{1}{10^{8}\cdot10^{5}} = \dfrac{1}{10^{13}}$

$-5-8$

$8817204 \times 10^{-13-1}$

8.817204×10^{-14}

8.8×10^{-14}

Adding & Subtracting Sci Notation

① Stack BIG SMALL

② Change small

$\frac{3}{10} \times 10^{7}\cdot10$

③ Add or subtract #s in front

④ Keep the same 10

Multiply & Divide Sci Notation

① Regroup (#)(10s)

② Multiply Do 1st

③ Find out how many 10's

④ Change to Sci. notation