

Notes 6-2

Int 2

Adding & Subtracting with Scientific Notation

Unit 6

Adding:

Ex. 1:

3 cars	3 hundred	$3x$	
$+ 5 \text{ cars}$	$+ 5 \text{ hundred}$	$+ 5y$	
8 cars	8 hundred	$3x + 5y$	
			$3x$
			$+ 5x$
			$8x$
3 million	3×10^2	300	
$+ 5 \text{ hundred}$	$+ 5 \times 10^2$	$+ 500$	
$3,000,000$	8×10^2	800	
$+ 500$			
$3,000,500$			

Maintain the equality.

Ex. 2:

$5 = \frac{5 \cdot 10}{10}$	$3 = \frac{3 \cdot 10 \cdot 10}{10 \cdot 10}$
$0.5 \cdot 10$	
$5 = 5$	

Evaluate each expression. Express the result in scientific notation.

Ex. 3: $(6.89 \times 10^4) + (9.24 \times 10^5)$

$$\begin{array}{r}
 9.24 \times 10^5 \\
 + \underline{6.89 \times 10^4 \cdot 10} \\
 \hline
 9.24 \times 10^5 \\
 + \underline{.689 \times 10^5} \\
 \hline
 (9.929 \times 10^5)
 \end{array}$$

- ① Stack the numbers
BIG #
SMALL #
- ② Can't Add until the exponents match
- ③ Change the small #.
- ④ Add #'s in front
- ⑤ Keep the same 10
- ⑥ Check for sci. not.

Evaluate each expression. Express the result in scientific notation.

Ex. 4: $(5.2 \times 10^6) + (3.6 \times 10^8)$

$$\begin{array}{r} 3.6 \times 10^8 \\ + 5.2 \times 10^6 \cdot 10 \cdot 10 \\ \hline 10 \cdot 10 \end{array}$$

$$\begin{array}{r} 3.6 \times 10^8 \\ + .052 \times 10^8 \\ \hline 3.652 \times 10^8 \end{array}$$

Ex. 5: $(7.83 \times 10^8) - 11,610,000$
 1.161×10^7

$$\begin{array}{r} 7.83 \times 10^8 \\ - 1.161 \times 10^7 \cdot 10 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 7.83 \times 10^8 \\ - .1161 \times 10^8 \\ \hline 7.7139 \times 10^8 \end{array}$$

Ex. 6: $6,450,000,000 - (8.27 \times 10^7)$

$$\begin{array}{r} 6.45 \times 10^9 \\ 8.27 \times 10^7 \cdot 10 \cdot 10 \\ \hline 10 \cdot 10 \end{array}$$

$$\begin{array}{r} 6.45 \times 10^9 \\ - .0827 \times 10^9 \\ \hline 6.3673 \times 10^9 \end{array}$$

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Ex. 7: The following table provides the population for three states.

What is the total population for the states?

State	Population
California	$10 \cdot 3.80 \times 10^7$
Nevada	2.76×10^6
Utah	2.86×10^6

$$38.0 \times 10^6$$

$$2.76 \times 10^6$$

$$+ 2.86 \times 10^6$$

$$43.62 \times 10^{6+1}$$

$$4.362 \times 10^7$$