



Adding in Scientific Notation

Procedure:

1. Determine the number by which to increase the smaller exponent so it is equal to the larger exponent.
2. Increase the smaller exponent by this number and move the decimal point of the number with the smaller exponent to the left the same number of places. (i.e. divide by the appropriate power of 10.)
3. Add the new coefficients.
4. If the answer is not in scientific notation (i.e. if the coefficient is not between 1 and 10) convert it to scientific notation.

Example: $(2.456 \times 10^5) + (6.0034 \times 10^8) = ?$

1. $8 - 5 = 3$. The smaller exponent must be increased by 3.
2. $2.456 \times 10^5 = 0.002456 \times 10^8$
3. $(0.002456 \times 10^8) + (6.0034 \times 10^8) = (0.002456 + 6.0034) \times 10^8$
 $= 6.005856 \times 10^8$
4. 6.005856×10^8 is in scientific notation.

Thus, $(2.456 \times 10^5) + (6.0034 \times 10^8) = 6.005856 \times 10^8$.

Add.

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| 1. $8.32 \times 10^5 + 6.232 \times 10^8$ | 2. $4.7 \times 10^6 + 1.932 \times 10^8$ |
| 3. $6.239 \times 10^7 + 4.05 \times 10^3$ | 4. $8.535 \times 10^5 + 2.914 \times 10^6$ |
| 5. $3.567 \times 10^{12} + 6.1 \times 10^9$ | 6. $7.003 \times 10^8 + 1.77 \times 10^4$ |
| 7. $3.26 \times 10^{13} + 1.983 \times 10^{14}$ | 8. $3.497 \times 10^{10} + 8.6 \times 10^8$ |
| 9. $1.9 \times 10^7 + 7.345 \times 10^{11}$ | 10. $4.3561 \times 10^{16} + 6.2 \times 10^{11}$ |