Name_____

Calculations Using Significant Figures

When multiplying numbers in scientific notation, multiply the first part of the number, the **mantissa**, and add the exponents.

Example: $(3.0 \times 10^2)(2.5 \times 10^6) =$

Multiply: $3.0 \times 2.5 = 7.5$

Then, add: $2 + 6 = 8$

$= 7.5 \times 10^8$

When dividing numbers in scientific notation, divide the mantissa and subtract the exponents.

Example: $\dfrac{9.0 \times 10^6}{4.5 \times 10^2}$

Divide: 9.0 by $4.5 = 2.0$

Then, subtract: $2 - 6 = 4$

$= 2.0 \times 10^4$

Perform each calculation. Express all answers in scientific notation.

1. $(1.5 \times 10^3)(3.5 \times 10^5)$	6. $(4 \times 10^5) \div (1 \times 10^{-3})$
2. $(2.0 \times 10^8)(2.0 \times 10^6)$	7. $(7.6 \times 10^{-3})(8.2 \times 10^{-4})$
3. $(6.2 \times 10^6) \div (3.1 \times 10^2)$	8. $(8.5 \times 10^{-8}) \div (2.5 \times 10^{-3})$
4. $(5.0 \times 10^4) \div (2.5 \times 10^3)$	9. $(7.0 \times 10^{11})(7.0 \times 10^{-11})$
5. $(6.8 \times 10^7)(2.2 \times 10^{-5})$	10. $(1.3 \times 10^{-5}) \div (2.6 \times 10^{-9})$