Scientific Notation

When numbers are very large or very small, they are easier to interpret when written in scientific notation. Scientific notation also makes it easier to show the number of significant digits. Numbers written in scientific notation have two parts: the first part is a number between 1 and 10; the second part is 10 raised to any whole number exponent. The two parts are multiplied by each other. Numbers are converted to scientific notation by moving the decimal point of the original number to get a number between 1 and 10. Keep track of the number of places the decimal has been moved and the direction to get the exponent.

Example
$16,400 = 1.64 \times 10^4$

The exponent is equal to the number of places the decimal is moved
- ☆   decimal left → positive exponent
- ☆   decimal right → negative exponent

Convert the numbers below into scientific notation.

[1] 1,000,000 .... _____

[2] 6,460,000,000 .... _____

[3] 0.14 .... _____

[4] 70 .... _____

[5] 0.007890 .... _____

[6] 8400 .... _____

[7] 351,600 .... _____

[8] 0.000013 .... _____

[9] 0.0054 .... _____

[10] 0.01 .... _____

Convert the following numbers to common notation.

[11] 3.00×10^8 .... _____

[12] 2.0×10^5 .... _____

[13] 7.819×10^2 .... _____

[14] 5.1×10^0 .... _____

[15] 8×10^{-2} .... _____

[16] 1.26×10^{-6} .... _____

[17] 2.39×10^{-4} .... _____

[18] 8.000×10^4 .... _____

[19] 6.350×10^{-5} .... _____

[20] 7.416×10^1 .... _____