Scientific Notation

A number in *scientific notation* (SN) is expressed as the product of a number between 1 and 10 and a power of 10.

To write a number greater than 1 in SN, follow these:

1. Move the decimal point to the LEFT so that there is only one nonzero digit to its left.
2. Indicate the multiplication of this number by the power of 10 based on the number of places the decimal point is moved.

To express a number less than 1 in SN, follow these:

1. Move the decimal point to the RIGHT so that there is only one nonzero digit to it left.
2. Count the number of places that the decimal point moved and use this number, written with a minus sign, as the exponent of the base 10.

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Express each number in scientific notation:

14 000 000 _____   18 000 _____

0.000 53 _____   0.004 78 _____

$(5 \times 10^5) (7 \times 10^7) =$ _____

$0.000\ 008 \times 0.000\ 9 =$ _____

Write each SN in standard form:

34×10^5 _____ $1.400\ 09 \times 10^7$ _____

6.0×10^4 _____ 8.3×10^2 _____