

Scientific Notation

October 6, 2015 8:37 AM

- Is a way of expressing very large/small numbers using base 10 powers
- used so you don't have to write numbers in standard form

BIG NUMBERS

STEP 1 : Write the decimal after the 1st digit and drop the zeros at the end

STEP 2 Count how many places to the right the actual decimal should be and that # is the power of 10

Ex #1

STANDARD
FORM

SCIENTIFIC
NOTATION

$$(a) \quad \underbrace{7000}_{3 \text{ places}} = 7 \times 10^3$$

7×1000

$$(b) \quad \underbrace{360,000}_{5 \text{ places}} = 3.6 \times 10^5$$

the coefficient (#) should be between 1-10, but not including 10

$$(c) \quad 60 = 6 \times 10^1$$

SMALL NUMBERS

STEP 1 Write the decimal after the 1st digit and drop the zeros at the beginning

STEP 2 Count how many decimal places to the LEFT the actual decimal should be and this is the # to the power of 10 as a NEGATIVE

Ex. #2

$$(a) \ 0.00956 = 956 \times 10^{-3}$$

$$(b) \ 0.000014 = 1.4 \times 10^{-5}$$

Scientific Notation \rightarrow Standard form

Ex #3

$$(a) \ 265 \times 10^{-3} = 0.00265$$

negative!
 \therefore small #

$$(b) \ 7 \times 10^6 = 7,000,000$$

$$(c) \ 74 \times 10^{-6} = 0.0000074$$

$$(c) \quad 14 \times 10^{-6} = 0.00000014$$

$$(d) \quad 5 \times 10^0 = 5 \times 1 = 5$$