

Scientific Notation

Scientific Notation

- What is it?
- Examples:
 - $7 * 10^2$
 - $4.9 * 10^9$
- Why do we use it?
 - Method of expressing very large or very small numbers

Scientific Notation: Rules

- The first number has to be: $1 \leq x \leq 9$
- Always multiply by 10 to some power
- Negative powers make numbers smaller
- Positive powers make numbers bigger

Scientific Notation: Practice

- Which of the following are in **scientific notation**?

$$56.7 \times 10^3$$

$$12.345$$

$$6.9 \times 10^2$$

$$1.7 \times 10^{-2}$$

$$7.0 \times 10_{10}$$

$$8,902,506.5 \times 10^{-8}$$

How to write numbers in Scientific Notation

- Jump the decimal
- Count
- Follow the rules

Scientific Notation: More Practice

EXAMPLE:

3,450,000,000

- How many times did you move the decimal? _____
- What direction: _____
- What power will the 10 be raised to? _____

Scientific Notation: More Practice

EXAMPLE:

0.0000000059

- How many times did you move the decimal? _____
- What direction: _____
- What power will the 10 be raised to? _____

Backwards Scientific Notation

Write the following “scientific notation” numbers in number form:

Example: $7.95 \times 10^4 = 79,500$

Example: $5.3 \times 10^{-3} = 0.0053$

$8.97 \times 10^5 =$

$8.567 \times 10^{-2} =$