SCIENTIFIC NOTATION

Scientific notation refers to expressing a number as a product of any number between 1 and 10 to the 10th power. Scientific notation is mostly used when dealing with large quantities or numbers containing many digits since it shortens the notation.

Examples:	*Original number*	$\rightarrow$	*Scientific Notation*
	76300	$\rightarrow$	7.63×10^{4}
	2,560,000	$\rightarrow$	2.56×10^{6}
	0.000066	$\rightarrow$	6.6×10^{-5}
	0.005	$\rightarrow$	5×10^{-3}

To write a number in scientific notation:

If the number is in decimal notation, move the decimal point to the right of its original position and place it after the first non-zero digit. The exponent of 10 will be the number of places the original decimal point was moved, and it will be *negative* since it was moved to the right.

Examples:	0.0000643	$\rightarrow$	6.43×10^{-5}

If the number to be changed to scientific notation is a whole number greater than 10, move the decimal point to the left of its original position and place it after the first digit. The exponent of 10 will be the number of places the original decimal point was moved, and it will be *positive* since it was moved to the left.

Examples:	125,000	$\rightarrow$	1.25×10^{5}

SCIENTIFIC NOTATION – EXERCISES

Express the following numbers in scientific notation:

1. 0.00125

2. 2,000,000,000

3. 796,000

4. 872

5. 90

6. 27×10^{3}

7. 281×10^{2}

8. 0.00179

9. 0.0000763

10. 367×10^{-3}

SCIENTIFIC NOTATION -- ANSWERS TO EXERCISES

1. $0.00125 = 1.25 \times 10^{-3}$

2. $2,000,000,000 = 2 \times 10^{9}$

3. $796,000 = 7.96 \times 10^{5}$

4. $872 = 8.72 \times 10^{2}$

5. $90 = 9 \times 10^{1}$

6. $27 \times 10^{3} = 2.7 \times 10^{4}$

7. $281 \times 10^{2} = 2.81 \times 10^{4}$

8. $0.00179 = 1.79 \times 10^{-3}$

9. $0.0000763 = 7.63 \times 10^{-5}$

10. $367 \times 10^{-3} = 3.67 \times 10^{-1}$