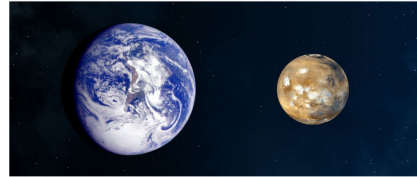


CW: 4.3.1

On average, Earth is about **225,000,000** km from Mars.

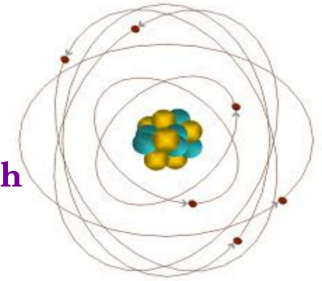


Another way to write this distance is: **2.25×10^8**

The number **225,000,000** is written in standard form.

The number **2.25×10^8** is written in scientific notation.

On average, the diameter of an atom is about **.00000003** cm.



Another way to express this length is: **3×10^{-8}**

The number **.00000003** is written in standard form.

The number **3×10^{-8}** is written in scientific notation.

Scientific Notation:

- A way to express very large or very small numbers.

Examples of numbers written in scientific notation:

6×10^4 **3.75×10^{10}** **4.5×10^{-3}** **9×10^{-12}**

A number is written in scientific notation when:

- the first value is between 1 and 9.9

- the second value is a power of 10. The exponent tells us the number of spaces the decimal is moved.

- a positive exponent represents numbers greater than 1.
- a negative exponent represents numbers between 0 and 1.

Indicate whether each of the following is expressed in scientific notation by dragging it to the right column.

Not in scientific notation	In scientific notation
23.7×10^{12}	8.934×10^4
5.07×8^2	1.03×10^3
0.897×10^8	3.307×10^5
19.2×10^7	
1.92×10^8	

The following values represent the distance, in miles, between the given planet and the sun. Write the values either in standard form or in scientific notation to complete the table.

	Standard form	Scientific Notation
Mercury	<u>35,980,000</u>	3.598×10^7
Venus	<u>67,230,000</u>	6.723×10^7
Earth	92,897,000	9.2897×10^7 <small>+ 3 more</small>
Mars	141,600,000	1.416×10^8 <small>+ 3 more</small>
Jupiter	483,600,000	
Saturn	888,200,000	
Uranus	178,641,000,000	1.78641×10^{11} <small>+ 5 more</small>
Neptune		2.8×10^9
Pluto	3,665,200,000	3.6652×10^9

The following atoms were measured and their diameters are listed in the table below. Write the values either in standard form or scientific notation to complete the table.

	Standard form	Scientific Notation
Atom #1	<u>.0000079</u>	7.9×10^{-6}
Atom #2	<u>.0000000821</u>	8.21×10^{-8}
Atom #3	.00052	5.2×10^{-4}
Atom #4	.00000000063781	6.3781×10^{-10}
Atom #5	.000000000004	
Atom #6	.000102	
Atom #7	.0000362	3.62×10^{-5}
Atom #8		1.033×10^{-8}
Atom #9	.9	9×10^{-1}