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5.NBT.A.2 Writing Large Numbers Using Scientific Notations

5.NBT.A.2: Explain patterns in zeros of the product and in the placement of the decimal point.

1. Which of the following statements are true about scientific notation? Write TRUE or FALSE.

   Answers:

   a. The first factor must be a number between 0 and 100.
   b. The second factor is a power of ten.
   c. The first factor must be a number between 1 and 10.
   d. The exponent of the second factor can be any number.
   e. Scientific notation is a method of writing too small or too large numbers.

   a.
   b.
   c.
   d.
   e.

2. Write each number in the table below using scientific notation.

Number	Scientific Notation	Number	Scientific Notation
350		548,000,000,000	
124,000		614,000,000	
681,000		30,000,000	
1,314		872,000,000,000	
85,000,000		631,000,000,000	
86,600		306,000,000,000,000	
40,000,000,000		3,000,000,000,000,000	
648,000,000,000,000		4,500,000,000,000	

3. Write each of the following in standard form.

   Answers:

   a. 3×10^{11}
   b. 6.14×10^4
   c. 5×10^7
   d. 8.21×10^6
   e. 3.07×10^7

   a.
   b.
   c.
   d.
   e.

4. In 2018, the most number of visitors in a park is approximately 45,200,000. Write the number of visitors in scientific notation.

   Answer:

5. Mercury is approximately closest to the Earth with a distance of 4.8×10^7 miles. Write the distance of Mercury to Earth in standard form.

   Answer:

6. How will you write 24,000,000,000 in scientific notation?

   A. 2.4×10^9 B. 2.4×10^{11} C. 2.4×10^{10} D. 24×10^{10}

   Answer:

7. True or False: "Exponent of the base 10 in scientific notation can be a fraction or a decimal."

   Answer:

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1. Which of the following statements are true about scientific notation? Write TRUE or FALSE.

   a. The first factor must be a number between 0 and 100.
   b. The second factor is a power of ten.
   c. The first factor must be a number between 1 and 10.
   d. The exponent of the second factor can be any number.
   e. Scientific notation is a method of writing too small or too large numbers.

   Answers:
   a. FALSE
   b. TRUE
   c. TRUE
   d. FALSE
   e. TRUE

2. Write each number in the table below using scientific notation.

Number	Scientific Notation	Number	Scientific Notation
350	3.5×10^2	548,000,000,000	5.48×10^{11}
124,000	1.24×10^5	614,000,000	6.14×10^8
681,000	6.81×10^5	30,000,000	3×10^7
1,314	1.314×10^3	872,000,000,000	8.72×10^{11}
85,000,000	8.5×10^7	631,000,000,000	6.31×10^{11}
86,600	8.66×10^4	306,000,000,000,000	3.06×10^{14}
40,000,000,000	4×10^{10}	3,000,000,000,000,000	3×10^{15}
648,000,000,000,000	6.48×10^{14}	4,500,000,000,000	4.5×10^{12}

3. Write each of the following in standard form.

   a. 3×10^{11}
   b. 6.14×10^4
   c. 5×10^7
   d. 8.21×10^6
   e. 3.07×10^7

   Answers:
   a. 300,000,000,000
   b. 61,400
   c. 50,000,000
   d. 8,210,000
   e. 30,700,000

4. In 2018, the most number of visitors in a park is approximately 45,200,000. Write the number of visitors in scientific notation.

   Answer:
   4.52×10^7

5. Mercury is approximately closest to the Earth with a distance of 4.8×10^7 miles. Write the distance of Mercury to Earth in standard form.

   Answer:
   48,000,000

6. How will you write 24,000,000,000 in scientific notation?
   A. 2.4×10^9 B. 2.4×10^{11} C. 2.4×10^{10} D. 24×10^{10}

   Answer:
   C. 2.4×10^{10}

7. True or False: "Exponent of the base 10 in scientific notation can be fraction or decimal."

   Answer:
   False