Name _____ Date _____

6-9 Study Guide

Scientific Notation

A number in **scientific notation** is written as the product of a number between 1 and 10 and a power of ten.

Examples **1** **Express 8.65×10^7 in standard form.**

$8.65 \times 10^7 = 8.65 \times 10{,}000{,}000$

$= 8.6500000.$ *Move the decimal point 7 places to the right.*

$= 86{,}500{,}000$

2 **Express 9.1×10^{-4} in standard form.**

$9.1 \times 10^{-4} = 9.1 \times \frac{1}{10^4}$

$= 9.1 \times \frac{1}{10{,}000}$

$= 9.1 \times 0.0001$

$= 0.0009.1$ *Move the decimal point 4 places to the left.*

$= 0.00091$

3 **Express 1,088,000 in scientific notation.**

$1.088000.$ *Move the decimal point to the right of the first nonzero digit. Move the decimal point 6 places to the left.*

$1{,}088{,}000 = 1.088 \times 10^6$

4 **Express 0.0000762 in scientific notation.**

$0.00007.62$ *Move the decimal point to the right of the first nonzero digit. Move the decimal point 5 places to the right.*

$0.0000762 = 7.62 \times 10^{-5}$

Express each number in standard form.

1. 7.02×10^4
2. 1.1×10^{-3}
3. 6.4×10^7
4. 5.9×10^8
5. 9.12×10^{-2}
6. 8.8×10^{-5}

Express each number in scientific notation.

7. 0.0003
8. 4,600,000
9. 0.00001653
10. 518,900,000
11. 720
12. 0.114

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6-9 Practice

Scientific Notation

Express each number in standard form.

1. 4.2×10^6
2. 3.75×10^2
3. -8.45×10^7
4. -6.32×10^{-5}
5. 8.84×10^{-7}
6. 4.125×10^5
7. 3.72×10^{-6}
8. -6.1×10^8
9. -3.4×10^{-3}
10. 3.45×10^6
11. 2.2846×10^7
12. 3.45×10^{-4}

Express each number in scientific notation.

13. 0.01624
14. 1,200
15. 0.00000008
16. 4,862
17. 9,000,000
18. 0.000023
19. 0.000603
20. 42,000,000
21. 423,000
22. 1,100,000,000
23. 0.0000061
24. 0.00412
25. 3,250,000
26. 32,500,000,000
27. 0.143

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