1.8 Scientific Notation

* **Used to:** Represent very large or very small numbers

* **Based on:** the powers of 10

$10^0 = 1$ $10^{-1} = 0.1$

$10^1 = 10$ $10^{-2} = 0.01$

$10^2 = 100$ $10^{-3} = 0.001$

$10^3 = 1{,}000$ $10^{-4} = 0.0001$

$10^4 = 10{,}000$

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Basic Form for scientific notation:

$a \times 10^n$ where $1 \leq a < 10$ and n is an integer

* Exactly one digit in front of the decimal pt.

positive exponents - Larger #'s

negative exponents - Smaller #'s

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Write each number in scientific notation.

1. 6387.
   6.387×10^3
2. 560,000.
   5.6×10^5
3. 0.00003
   3.0×10^{-5}
4. 0.00009621
   9.621×10^{-5}
5. 18,900,000,000
   1.89×10^{10}
6. 0.15060
   1.506×10^{-1}
7. 0.00000000814
   8.14×10^{-9}
8. 5,010,500
   5.0105×10^6
9. 453.5
   4.535×10^2

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Write each number in standard form.

10. 5.8×10^7
    58,000,000
11. 9.5×10^{-6}
    0.0000095
12. 9.8×10^5
    980000
13. $6. \times 10^3$
    6,000.
14. 5.045×10^{-7}
    0.0000005045
15. $.8 \times 10^{-3}$
    0.008
16. 1.092×10^6
    1,092,000
17. 8.01×10^{-4}
    0.000801
18. 4.875×10^{-1}
    0.4875

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HOMEWORK

Worksheet - HW 1.8 Scientific Notation

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