10.5 Scientific Notation p. 438

Scientific Notation is used to write numbers that are really small or really large.

- it is the product of a factor that is greater than or equal to 1 but less than 10 and a power of 10.

ex: 4.2×10^{7}

9.8×10^{-3}

Tell whether the following are written in scientific notation: write yes or no (if no, why not)

a) 5.9×10^{-6} yes

b) 0.9×10^{8} no; 0.9 is less than 1

c) 2.5×10^{4} yes

d) 1×10 yes

e) 12×10^{-3} no; 12 is greater than 1

f) 8.3×6^{-2} no; 6^{-2} is not a power of 10

Writing Numbers in Standard Form:

- if the exponent is negative, move the decimal to the left (the number gets smaller)
- if the exponent is positive, move the decimal to the right (the number gets larger)

a) $3.22 \times 10^{-4} = 0.000322$

b) $7.9 \times 10^{5} = 790{,}000$ (put commas for large numbers)

c) $6 \times 10^{7} = 60{,}000{,}000$

d) $9.9 \times 10^{-5} = 0.000099$

*see ex. 3-4 p. 439