

P-115 Scientific Notation Jan. 31

Scientific Notation is a compact way to write very small or very large numbers

1. 45000000 2. 0.0089

$$4.5 \times 10^7 \qquad 8.9 \times 10^{-2}$$

3. 0.2

$$= 2.0 \times 10^{-1}$$

$$4 \quad 0.000055 \\ = 5.5 \times 10^{-5}$$

$$7. \quad 2.3 \times 10^4 \\ 23,000$$

$$9. \quad 7 \times 10^{-5} \\ = 0.00007$$

17.

$$(2.5 \times 10^{-3}) \times (5 \times 10^{-4})$$

$$= (2.5 \times 5) (10^{-3} \times 10^{-4})$$

$$= 12.5 \times 10^{-7+1}$$

$$= 1.25 \times 10^{-6}$$

$$18. (3.2 \times 10^{-3}) \times (4.1 \times 10^{-2})$$

$$= (3.2 \times 4.1) \times 10^{-5}$$

$$= 13.12 \times 10^{-5+1}$$

$$= 1.312 \times 10^{-4}$$

$$21. (3.5 \times 10^{-4}) \div (7 \times 10^{-3})$$

$$= (3.5 \div 7) (10^{-4} - (-3))$$

$$= 0.5 \times 10^{-1-1}$$

$$= 5.0 \times 10^{-2}$$

26. Given: One water molecule
has a mass of 3×10^{-26} kg
Lake Superior holds 1.2×10^{16} kg of water
Find: how many water molecules in
L.S.?

$$1.2 \times 10^{16} \div 3 \times 10^{-26}$$

$$= (1.2 \div 3) (10^{16} - (-26))$$

$$= 0.4 \times 10^{42}$$

$$= 4.0 \times 10^{41}$$

4.0×10^{41}
molecules

$$5^3 \times 5^2 \times 5^1$$

$$= 5^6$$

$$= 15625$$

$$n^{-4} \div n^{-6}$$

$$= n^{-4 - (-6)}$$

$$= n^2$$

$$= 3^2 = 9$$

$$(2^3)^4$$

$$= 2^{12}$$

$$= 4096$$

$$= 4096$$

$$7000$$

$$= \frac{1}{7000^3}$$

$$3^2 \div 3^{-1}$$

Simplify,
then
evaluate

$$-2^{-3} \times 2^2$$

$$(2^3)^{-2}$$

$$(-3^2)^{-1}$$



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Factoring

an37

$$\begin{aligned} 1. \quad & \frac{12x}{6} + \frac{18y}{6} \\ & \xrightarrow{\quad} 6(2x + 3y) \\ & = 12x + 18y \end{aligned}$$

$$\begin{aligned} 2. \quad & \frac{3x^2}{x} - \frac{5x}{x} \\ & = x(3x - 5) \end{aligned}$$

$$\begin{aligned} 5. \quad & \frac{8abc}{4ab} - \frac{12ab}{4ab} \\ & = 4ab(2c - 3) \end{aligned}$$

$$6. \quad \frac{3y^2}{3y} + \frac{18y}{3y} \\ = 3y(y+6)$$

$$8. \quad \frac{4a^3}{4a^2} - \frac{8a^2}{4a^2} \\ = 4a^2(a-2)$$

$$10. \quad \frac{33ab}{11b} - \frac{22b}{11b} \\ = 11b(3a-2)$$

$$12. \quad \frac{27a^2b^2}{9b} - \frac{18ab}{9b} + \frac{9b}{9b} \\ = 9b(3a^2b - 2a + 1)$$

$$15. \quad \frac{10x+15}{5}$$

$$= 5(2x+3)$$

$$17. \quad \frac{2mn-n}{n}$$

$$= n(2m-1)$$

Homework

Do the
First Side

of Sheet

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