

P.115

Jan. 30

Scientific Notation

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

1. $4,500,000$
 $= 4.5 \times 10^6$

2. 0.089

8.9×10^{-2}

3. 0.2
 $= 2.0 \times 10^{-1}$

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

$$7. \quad 2.3 \times 10^4$$

$$= 23,000$$

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

$$0.00007$$

$$17. \quad (2.5 \times 10^{-3}) \times (5 \times 10^{-4})$$

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

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

$$\begin{aligned}
 19. \quad & (3.2 \times 10^{-3}) \times (4.1 \times 10^{-2}) \\
 &= (3.2 \times 4.1) (10^{-3} \times 10^{-2}) \\
 &= 13.12 \times 10^{-5+1} \\
 &= 1.312 \times 10^{-4}
 \end{aligned}$$

$$\begin{aligned}
 21. \quad & (3.5 \times 10^{-4}) \div (7 \times 10^{-3}) \\
 &= (3.5 \div 7) (10^{-4} - (-3)) \\
 &= 0.5 \times 10^{-1} \\
 &\rightarrow 5.0 \times 10^{-2}
 \end{aligned}$$

26. Given: one water molecule has a mass of about 3×10^{-26} kg. How many water molecules in Lake Superior which holds 1.2×10^{16} kg of water

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

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

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

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

$$= 5^6$$

Simpl. by

$$\frac{97}{1}^{-12}$$

$$= 15625 \text{ Evaluate}$$

$$= \frac{1}{97} 12$$

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

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

$$= 3^3$$

$$= 3$$

$$= 27$$

$$(3ab)^7$$

$$= 3^7 a^7 b^7$$

$$= 2187$$



P. 278 Factoring

$$1. \quad \frac{12x}{6} + \frac{18y}{6}$$

$$= 6(2x + 3y)$$

$$= 12x + 18y$$

$$5. \quad 8abc - \frac{12ab}{4ab}$$

$$= 4ab(2c - 3)$$

$$2. \quad \frac{3x^2}{x} - \frac{5x}{x}$$

$$= x(3x - 5)$$

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

$$= 3y(y + 6)$$

$$8. \frac{4a^3}{4a^2} - \frac{8a^2}{4a^2}$$

$$= 4a^2(a - 2)$$

$$10. \frac{33ab}{11b} - \frac{22b}{11b}$$

$$= 11b(3a - 2)$$

$$12. \frac{27a^2b^2}{9b} - \frac{18ab}{9b} + \frac{9b}{9b}$$

$$= 9b(3a^2b - 2a + 1)$$

$$15. \frac{10x + 15}{5} = 5(2x + 3)$$

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

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

homework.

$$19. \quad \frac{8x^2}{4x^2} + \frac{4x^3}{4x^2}$$

$$= 4x^2(2 + x)$$

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