

Name: _____

Hour: _____ Date: _____

Chemistry: *Mathematics of Chemistry*

Complete the following calculations. Include units on your answers.

1. $\frac{(100 \text{ m})}{(24 \text{ s})}$

8. $\frac{(8.1 \text{ kg})}{(0.45 \text{ cm} \times 0.55 \text{ cm})}$

2. $(5.2 \text{ m}) (4.3 \text{ m})$

9. $0.45 \text{ mm} \times 0.28 \text{ mm} \times 0.85 \text{ mm}$

3. $\frac{(54 \text{ g})}{(4 \text{ L})}$

10. $\frac{(75 \text{ kg}) (5.0 \text{ m})}{(2.5 \text{ s}) (6.0 \text{ s})}$

4. $(34 \text{ cm}) (21 \text{ cm}) (8 \text{ cm})$

11. $56 \text{ N} \times 2.5 \text{ m}$

5. $\frac{(10 \text{ kg}) (30 \text{ m})}{(5 \text{ s})}$

12. $\frac{12700 \text{ J}}{(116 \text{ g}) (4.8^\circ\text{C})}$

6. $\frac{(4.08 \text{ g})}{(0.061 \text{ g})}$

13. $\frac{26000 \text{ J}}{125 \text{ g}}$

7. $\frac{(7.5 \text{ N}) (0.25 \text{ m})}{(0.68 \text{ s})}$

14. $\frac{1.35 \text{ mol}}{3.55 \text{ L}}$

Simplify the following expressions.

15. $5 \frac{(5y - 4y)}{10}$

16. $\frac{100 \times 5 \times 11}{(18)(2)}$

17. $\frac{6a \times 5b^2}{3a^3}$

18. $3d (4d) (0.25d)$

19. $\frac{(2a - 3b)(3b)}{3c \times c}$

20. $(4f + 13g) (2w)$

Solve each of the following expressions for x. (x = ?)

21. $2x - 15 = 8$

22. $4x = 3y + 8$ (if $y = 2$)

23. $8x + 5y - z = 0$ (if $y = 3$ and $z = -1$)

24. $H = WQx$

25. $Y = \frac{(T + 6)}{x}$

26. $x + 8 = 23FG$

27. $\frac{18KRx}{F^2} = E$

28. $T = LxS$

29. $15G - x = W$

30. $\frac{B^2H^5x}{E^4R} = \frac{T^3K}{Y}$

Express in standard form.

Express in scientific notation.

31. 5.2×10^3

34. 780000

32. 9.65×10^{-4}

35. 0.00000422

33. 8.5×10^{-2}

36. 10000000

Use the exponent function on your calculator to compute the following.

37. $(4.1 \times 10^{23})(8.0 \times 10^3)$

43. $(3.2 \times 10^4) / (6.8 \times 10^3)$

38. $(3.6 \times 10^4)(13)$

44. $(4.6 \times 10^3) / (9.8)$

39. $(4.0 \times 10^{-3})(145)$

45. $(298) / (2.7 \times 10^{-2})$

40. $(7.9 \times 10^5)(3.1 \times 10^{-8})$

46. $(5.6 \times 10^{-9}) / (3.3 \times 10^6)$

41. $(4.7 \times 10^{-4})(1.1 \times 10^{-3})$

47. $(6.3 \times 10^{-6}) / (4.4 \times 10^{-3})$

42. $(-3.2 \times 10^{-7})(8.0 \times 10^{-9})$

48. $(-8.5 \times 10^{-4}) / (3.7 \times 10^{-16})$