

1.4 Order of Operations

Rules that tell us how
we are to solve math
problems
PEMDAS

P - Grouping Symbols
(), [], { }, —

$$\frac{7+21}{5-1} \quad \frac{28}{4} \quad 7$$

E - Exponents

$$\begin{array}{ll} 2^2 + 5 & 3x^2 \text{ when } x=4 \\ 4 + 5 & \text{Not } 12^2 \\ 9 & 3 \cdot 4^2 \\ & 3 \cdot 16 \\ & 48 \end{array}$$

M/D multiply and Divide
L → R

$$\begin{array}{ll} 8 \div 4 \times 3 & 6 \times 2 \div 4 \\ 2 \times 3 & 12 \div 4 \\ 6 & 3 \end{array}$$

$$\begin{array}{l} 8 \div 4 + 3 \times 2 \\ 2 + 6 \\ 8 \end{array}$$

A/S Add/Subtract
L → R

$$\begin{array}{l} ((4-2)+3)^2 - 10 \\ (2+3)^2 - 10 \\ 5^2 - 10 \\ 25 - 10 \\ 15 \end{array}$$

$$\begin{array}{l} 4 + 16 \div (2+3) \times 5 = 20 \\ 4 + 16 \div 5 \times 5 = 20 \end{array}$$

$$4 + (16 \div (2 + 3)) \times 5 = 59$$
$$4 + (16 \div 2 + 3) \times 5 = 59$$

$$x = 9$$

$$2x^2 + 2x + 4$$
$$2(9)^2 + 2(9) + 4$$
$$2(81) + 2(9) + 4$$
$$162 + 18 + 4$$
$$184$$