

# Notes 1-1

**Sec 1 H**

**Order of Operations & Solving Equations**

**Unit 1**

**Order of Operations:**

- Parenthesis - Grouping Symbols ( ) [ ] { } || √
- Exponents -  $2^3 = 2 \cdot 2 \cdot 2 = 8$
- Multiply → Divide      Divide → Multiply      Left → Right
- Add → Subtract      Subtract → Add      Left → Right

**Evaluate.**

Ex. 1:  $2[3 - 4(1 - 3)^2]$   
 $2[3 - 4(-2)^2]$   
 $2[3 - 4(4)]$   
 $2[3 - 16]$   
 $2[-13] = -26$

Ex. 2:  $3(5 + 6) - 4(3)$   
 $3(11) - 4(3)$   
 $33 - 12$   
 $21$

Ex. 3:  $\frac{2(5 - 6)^2 + 8}{8 - 7 + 4} = \frac{2(-1)^2 + 8}{8 - 7 + 4}$   
 $\frac{2 + 8}{8 - 7 + 4} = \frac{10}{5} = 2$

Ex. 4:  $\frac{-5 - 2(-3)}{4(-5) - 7} = \frac{-5 + 6}{-20 - 7} = \frac{1}{-27}$

**Steps for Solving Equations:**

- opposite operations to both sides

Ex. 5:  $2x + 7 = 5$   
 $2x = -2$   
 $\frac{2x}{2} = \frac{-2}{2}$   
 $x = -1$

Ex. 6:  $6 + 4y = -10$   
 $4y = -16$   
 $\frac{4y}{4} = \frac{-16}{4}$   
 $y = -4$

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Unit 1

Solve.

Ex. 7:

$$\begin{array}{r} \curvearrowright \quad \curvearrowleft \\ -5(x+2) = 20 \\ -5x - 10 = 20 \\ \quad +10 \quad +10 \\ \hline \end{array}$$

$$\begin{array}{r} -5x \\ -5 \\ \hline \end{array} = \begin{array}{r} 30 \\ -5 \\ \hline \end{array}$$

$$x = -6$$

$$\begin{array}{r} -5(x+2) = 20 \\ \hline -5 \quad \quad -5 \end{array}$$

$$\begin{array}{r} x+2 = -4 \\ -2 \quad -2 \\ \hline \end{array}$$

$$x = -6$$

Ex. 8:

$$\cancel{2} \cdot \frac{y+7}{2} = 21 \cdot 2$$

$$\begin{array}{r} y+7 = 42 \\ -7 \quad -7 \\ \hline \end{array}$$

$$y = 35$$

Ex. 9:

$$23 - (-d) = 4$$

Ex. 10:

$$\begin{array}{r} 5e + 8 = 7e - 10 \\ \cancel{5e} \quad \quad \quad \quad -5e \\ \hline 8 = 2e - 10 \end{array}$$

Ex. 11:

$$\begin{array}{r} \curvearrowright \quad \curvearrowleft \\ 2(5x+4) = 7x - 4 \\ 10x + 8 = 7x - 4 \\ -7x \quad \quad \quad -7x \\ \hline 3x + 8 = -4 \end{array}$$