

## 7-4 EQUATIONS with VARIABLES on Both SIDES

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Method to Solve

- 1.) Drop Parathesis  
Use the Distributive  
Properties.
- 2.) Combine Like Terms.
- 3.) Undo Addition or  
SUBTRACTION so  
VARIABLES are on  
one SIDE & Constants  
are on the other.
- 4.) Undo Mult. or  
Div.

$$\begin{aligned}
 n + 2(n+2) &= n+16 \\
 n + 2n + 4 &= n+16 \\
 3n + 4 - 4 &= n+16-4 \\
 3n &= n+12 \\
 3n - n &= 12+n-n \\
 \frac{2n}{2} &= \frac{12}{2} \\
 n &= 6
 \end{aligned}$$

$$\begin{aligned}
 \underline{5x} + 2 + \underline{3x} &= 2x + 7 + x \\
 5x + 3x + 2 &= 2x + x + 7 \\
 2x + 2 &= 1x + 7 \\
 2x + \underline{(2+2)} &= x + 7 + 2 \\
 2x &= x + 9 \\
 2x - x &= 9 + x - x \\
 x &= 9
 \end{aligned}$$

$$3x + 7 = 5x - 1$$

$$3x + 7 + 1 = 5x - 1 + 1$$

$$3x + 8 = 5x$$

$$8 + 3x - 3x = 5x - 3x$$

$$\frac{8}{2} = \frac{2x}{2}$$

$$4 = x$$