

## 2 unknowns using the Substitute Method

### Example:

$$3x + 2y = 2 \quad x + y = 4$$

1. Solve for one variable in terms of the other.

$$x - x + y = 4 - x \quad \text{subtracted } x \text{ from both sides} \quad y = 4 - x$$

2. Substitute this value of  $y$ , ( $y = 4 - x$ ) in the second equation.

$$3x + 2(4 - X) = 2$$

3. Solve

$$3x + 2(4 - X) = 2 \quad 3x + 8 - 2x = 2 \quad x + 8 = 2 \quad x = -6$$

get rid of ( ) combine similar terms get rid of numbers

4. Substitute this value ( $x = -6$ ) in the first equation and solve for the other variable

$$x + y = 4 \quad -6 + y = 4 \quad y = 10$$

add +6 to both sides

5. Check

$$x + y = 4 \quad -6 + 10 = 4 \quad 4 = 4$$