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$$b = 3a - 1$$

$$-2a + 4(3a - 1) = 6$$

$$b = 3a - 1$$

$$-2a + 12a - 4 = 6$$

$$b = 3(1) - 1$$

$$10a - 4 = 6$$

$$b = 3 - 1$$

$$10a = 10$$

$$b = 2$$

$$a = 1$$

## Substitution Method Review

Isolate one of the variables in one of the equations and substitute into the other equation. Solve, and then substitute again.

Solve using the substitution method. Hint: clear fractions

$$\frac{1}{2}x + y = 3 \text{ and } 2x + 3y = 10$$

$$2\left(\frac{1}{2}x + y = 3\right)$$

$$x + 2y = 6$$

$$x = \boxed{-2y + 6}$$

$$x = -2(2) + 6$$

$$x = 2$$

$$2(-2y + 6) + 3y = 10$$

$$-4y + 12 + 3y = 10$$

$$-1y = -2$$

$$y = 2$$

$$(2, 2)$$

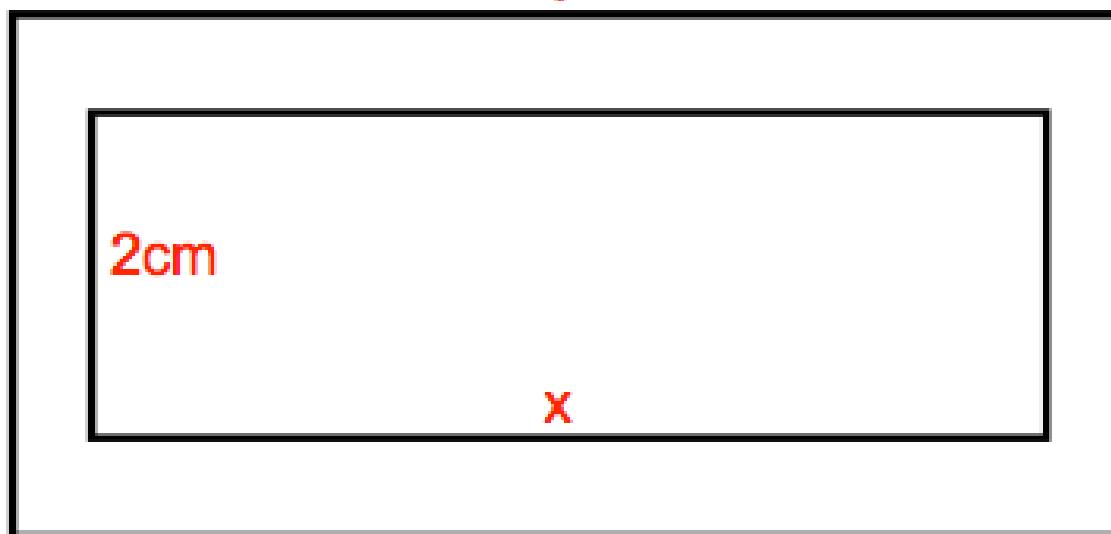
Solve using the substitution method.

A rectangular hole is cut from a piece of sheet metal. The length of the hole is 1 centimeter less than the length of the metal sheet.

After the hole is cut, the area of the remaining metal is  $11\text{cm}^2$ .

Find the length of the hole and the length of the metal sheet.)

1<sup>st</sup>  
equation



2<sup>nd</sup>  
equation

$$y = \boxed{x + 1}$$

or

$$x = y - 1$$

and

$$\frac{7}{2}y - 2x = 11$$

$$7y - 4x = 22$$

$$7(x+1) - 4x = 22$$

$$7x + 7 - 4x = 22$$

$$3x = 15$$

$$x = \boxed{5}$$

$$y = 5 + 1$$

$$y = 6$$

Hole is 5cm long

and metal sheet

is 6cm long.