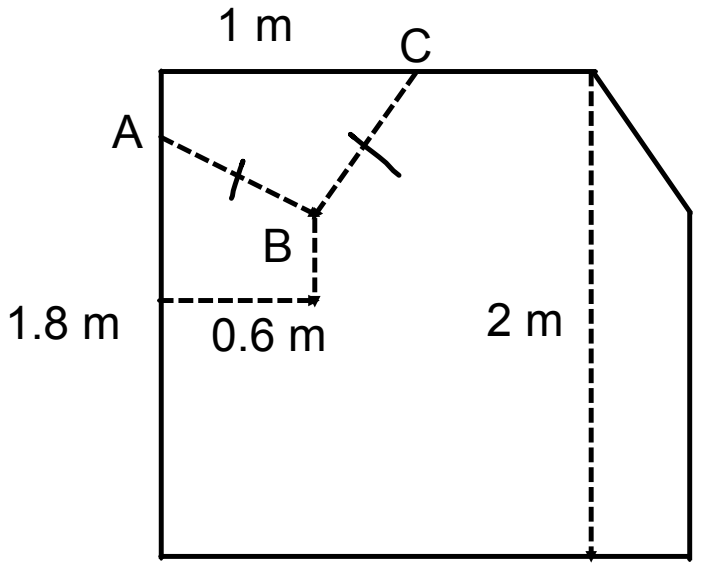
3.



Sometimes comparison/graphing isn't a very efficient way to find a point of intersection...

e.g. p. 106 # 1. d)

$y = 5 - 3x$

$3x + 2y = 1$

$3x + 2(11) = 1$

$3x + 2(5 - 3x) = 1$

$3x + 10 - 6x = 1$

$-3x = 1 - 10$

$\frac{-3x}{-3} = \frac{-9}{-3}$

$x = 3$

① $y = 5 - 3(3)$

$y = 5 - 9$

$y = -4$

Substitution Method

- similar to comparison except that only one of the variables is isolated

You can solve a system of equations through substitution by following these steps:

1. Pick an equation and isolate one of the variables.
2. Plug in (substitute) the expression for the variable in the **other** equation.
3. Simplify and solve.
4. Plug in your answer into one of the original equations.
5. Solve.

e.g. p. 106 # 1. d)

$y = 5 - 3x$

$3x + 2y = 1$

① $x = 5 - 3y$

② $3x + 2y = 1$

$3(5 - 3y) + 2y = 1$

$x = 6$

① $x = y$

1. $x = 5 - 3y$
2. $3(5 - 3y) + 2y = 1$
3. $15 - 9y + 2y = 1$

$15 - 7y = 1$

$-7y = 1 - 15$

$-7y = -14$

$y = 2$

4. $x = 5 - 3y$
5. $x = 5 - 3(2)$

$x = 5 - 6$

$x = -1$

Try it out...

p. 106 # 1. f)

$2x + 5y = 30$

$2y = \frac{1 - 3x}{2}$

$y = \frac{1}{2} - \frac{3x}{2}$

$y = 0.5 - 1.5x$

p. 106 #2

The area of the trapezoid is 30 square units. The big base measures 3 units less than double the small base.

a) Represent the situation using a system of equations.

b) Find the lengths of the two bases of the trapezoid