

Substitution Method

- Steps: get x or y by itself
 i) Choose one equation and isolate one variable; this equation will be considered the first equation. (easiest one to get x= or y= from either eqn 1 or eqn 2)
- ii) Substitute the solution from step 1 into the second equation and solve for the variable in the equation.
- iii) Using the value found in step 2, substitute it into the first equation and solve for the second variable.
- iv) Substitute the values for both variables into both equations to show they are correct.

Solve this system of equation by substitution.

$$y = 15+6x$$

-3x -2y=0

$$-3x - 2y = 0$$

$$-3x - 2(15+6x) = 0$$

$$-3x - 30 - 12x = 0$$

$$-3x - 12x = 0 + 30$$

$$-15x = 30$$

$$-15$$

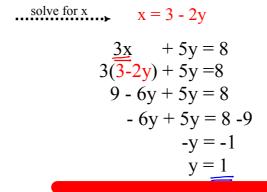
$$x = -2$$

$$y = 15+6x$$

 $y = 15 + 6(-2)$
 $y = 15 - 12$
 $y = 3$
 $(-2,3)$

Solve the system by Substitution Method

$$x + 2y = 3$$
$$3x + 5y = 8$$



$$x + 2y = 3$$

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



Use Substitution to Find the Point of Intersection

1)
$$x - 4y = 6 \rightarrow x = 6 + 4y$$

 $7x + 6y = 8$

$$7x + 6y = 8$$

$$7x + 6y + 9$$

$$7x + 6y = 8$$

$$7x + 6y + 9$$

Use Substitution to Find the Point of Intersection

2)
$$2x + y = 9$$
 $y = 9 - 3x$
 $3x - 5y = -19$
 $3x - 5(9 - 3x) = -19$
 $3x - 5(9 - 3x) = -19$
 $3x + 10x = -19 + 45$
 $3x = 36$
 $3x = 36$

Answers to worksheet:

- Q (1,-1) @ (3,3)
- 3 (0,-1) (6,6)

 - © (3,-7) @ (-G,1)

 - (6,2-) B (-6,2)
 - (1,E) (3,1)