Feb. 9

Homework:

Substitution sheet

Solve each system by substitution.

1) $y = x + 3$
$y = 2x + 2$

$x + 3 = 2x + 2$

$-x + 3 = 2 - 3$

$-x = -1$

$-1 \quad -1$

$x = 1$

Pof I: $(1, 4)$

Step 2 solve for y

$y = x + 3$

$y = 1 + 3$

$y = 4$

Step 3 Check

L.S.

y

4

R.S.

$2x + 2$

$2(1) + 2$

$2 + 2$

4

Solve each system by substitution.

2) ① $y = -2x + 6$
② $y = -3x + 10$

Step 1: Solve for x

$-2x + 6 = -3x + 10$

$+3x \quad +3x$

$x + 6 = 10$

$-6 \quad -6$

$x = 4$

Step 2: Substitute in ①

$y = -2x + 6$

$y = -2(4) + 6$

$y = -8 + 6$

$y = -2$

Step 3: check ②

L.S. y

-2

R.S.

$-3x + 10$

$-3(4) + 10$

$-12 + 10$

-2

Solution Set

POI $(4, -2)$

Solve each system by substitution.

3) $-2x - 2y = -20$ (1)
$-5x + y = -8$ (2)

Isolate y in (2)

$-5x + y = -8$

$y = \boxed{5x - 8}$

Step 2: Substitute in (1)

$-2x - 2y = -20$

$-2x - 2(5x - 8) = -20$

$-2x - 10x + 16 = -20$

$-16 \quad -16$

$-12x + 16 = -20$

$-12x = -36$

$\frac{-12x}{-12} = \frac{-36}{-12}$

$\boxed{x = 3}$

Step 3: Solve for y in (2)

$-5x + y = -8$

$-5(3) + y = -8$

$-15 + y = -8$

$\boxed{y = 7}$

Solve each system by substitution.

4) $4x + y = -9$
$-7x - 2y = 14$

Isolate y in (1)

$4x + y = -9$

$y = -4x - 9$

Step 2: Substitute in (2)

$-7x - 2y = 14$

$-7x - 2(-4x - 9) = 14$

$-7x + 8x + 18 = 14$

$-18 \quad -18$

$1x + 18 = 14$

$x = -4$

Step 3 find y in (1)

$4x + y = -9$

$4(-4) + y = -9$

$+16 \quad +16$

$-16 + y = -9$

$y = 7$

Solve each system by substitution.

① ② 5) $7x + y = 7$
$6x - 7y = 6$

$-7x \quad -7x$
$7x + y = 7$
$y = -7x + 7$

Substitute y in ②
$6x - 7(-7x + 7) = 6$
$6x + 49x - 49 = 6$
$+49 \quad +49$
$55x - 49 = 6$
$\frac{55x}{55} = \frac{55}{55}$
$x = 1$

Solve for y in ①
$7(1) + y = 7$
$-7 \quad -7$
$7 + y = 7$
$y = 0$

L.S.	R.S
$6x - 7y$	6
$6(1) - 7(0)$	
$6 - 0$	
6	

Solution
$(1, 0)$

Homework
substitution
sheet