Bellwork Alg 2A Thursday, December 15, 2016

1. Solve this system of equations.

$-4x + y - 5z = -45$
$3y + 8z = 51$
$x - 9y = -5$

Solve each system of equations. You must use Elimination and Substitution once each.

2. $11x - 10y = -82$
   $4x + 13y = 70$

3. $4x - 2y = 34$
   $5x - 2.5y = 42$

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ALG 2A BELLWORK
THUR 12-15-16

ANSWERS

1. EQ
① $-4x + y - 5z = -45$
② $3y + 8z = 51$
③ $x - 9y = -5$

FIRST Solve Eq ③ for x and substitute into Eq ①:

$x = 9y - 5$

Eq ① $-4(9y-5) + y - 5z = -45$

$-36y + 20 + y - 5z = -45$

$-35y + 20 - 5z = -45$

(A) $-35y - 5z = -65$

2ND use Eq ② & (A) to solve for y & z

② $5(3y + 8z = 51)$ $\quad 15y + 40z = 255$

$8(-35y - 5z = -65)$ $\quad -280y - 40z = -520$

$-265y = -265$

$y = 1$

3rd use Eq 2 to find z → $3(1) + 8z = 51$

$3 + 8z = 51$

$-3 \quad -3$

$\frac{8z}{8} = \frac{48}{8}$

$z = 6$

4th use eq 3 to find x → $x - 9(1) = -5$

$x - 9 = -5$

$+9 \quad +9$

$x = 4$

SOLUTION: $(4, 1, 6)$

(2) use Elimination

$4(11x - 10y = -82)$

$11(4x + 13y = 70)$

$44x - 40y = -328$

$-\ 44x + 143y = 770$

$-183y = -1098$

$y = 6$

use 2nd EQ to find X:

$4x + 13(6) = 70$

$4x + 78 = 70$

$-78 \quad -78$

$4x = -8$

$x = -2$

Sol: $(-2, 6)$

(3) use Substitution

$4x - 2y = 34$

$5x - 2.5y = 42$

solve this for y:

$y = \frac{34 - 4x}{-2}$

$y = -17 + 2x$

substitute this into 2nd EQ:

$5x - 2.5(-17 + 2x) = 42$

$5x + 42.5 - 5x = 42$

$42.5 = 42$

NO SOL