Algebra 1 6.3

Solve systems of equations by elimination

system of equations

solve

substitution method

zero pair

additive inverse

addition property of equality

whiteboards

(x, y) (a, b) ~~(b, a)~~

form zero pairs

GuidedPractice

1A. $-4x + 3y = -3$
$4x - 5y = 5$

$-4 \cdot x + 3 \cdot -1 = -3$

$-4x + -3 = -3$

$+3 \quad +3$

$-4x = 0$

$\frac{-4x}{-4} = \frac{0}{-4}$

$x = 0$

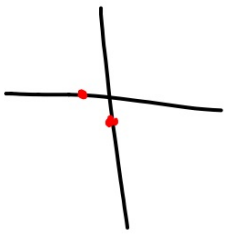
$-2y = 2$

$\frac{-2y}{-2} = \frac{2}{-2}$

$x \quad y$

$(0, -1)$

$(-1, 0)$



$4 \cdot 0 - 5 \cdot -1 = 5$

$0 + 5 = 5$!!

2. $8x + 5y = 38$
$-8x + 2y = 4$

$7y = 42$

$\frac{7y}{7} = \frac{42}{7}$

$y = 6$

$8x + 5 \cdot 6 = 38$

$8x + 30 = 38$

$-30 \quad -30$

$8x = 8$

$\frac{8x}{8} = \frac{8}{8}$

$x = 1$

$-8 \cdot 1 + 2 \cdot 6 = 4$

$-8 + 12 = 4$ ☺

$(1, 6)$

GuidedPractice

3. Solve the system of equations.

$$8b + 3c = 11$$
$$8b + 7c = 7$$

$\xrightarrow{-1}$ $-8b - 3c = -11$

$8b + 7c = 7$

$4c = -4$

$\frac{4c}{4} = \frac{-4}{4}$

$c = -1$

$8 \cdot b + 3 \cdot -1 = 11$

$8b - 3 = 11$

$+3 \quad +3$

$\frac{8b}{8} = \frac{14}{8}$

$(1.75, -1)$

$\left(\frac{7}{4}, -1\right)$

Standardized Test Example 3

Solve the system of equations.

$$2t + 5r = 6$$
$$9r + 2t = 22$$

$2t + 5r = 6 \rightarrow 5r + 2t = 6$

$9r + 2t = 22 \xrightarrow{\cdot -1} -9r + 2t = -22$

(r, t)

$(4, -7)$

$2t + 5 \cdot 4 = 6$

$2t + 20 = 6$

$-20 \quad -20$

$\frac{2t}{2} = \frac{-14}{2}$

$t = -7$

$\frac{-4r}{-4} = \frac{-16}{-4}$

$r = 4$

$9 \cdot 4 + 2 \cdot -7 = 22$ ✓

$36 + -14 = 22$

$x = 1^{ST}$ $y = 2^{nd}$

5. CCSS **REASONING** The sum of two numbers is 24. Five times the first number minus the second number is 12. What are the two numbers?

$x + y = 24$

$5x + -y = 12$

Whiteboards

2. $8x + 5y = 38$

$-8x + 2y = 4$

1. $5m - p = 7$
$7m - p = 11$

8. $y + z = 4$
$y - z = 8$

1. $5m - p = 7$
$7m - p = 11$

3 $7f + 3g = -6$

$7f - 2g = -31$

4. $6a - 3b = 27$
$2a - 3b = 11$