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

↑

zero pairs

Quiz 6.1-6.2

$2x$ $-2x$

$5y$ $-5y$

x $-x$

$-4 \cdot 0 + 5 \cdot -1 = -3$

form zero pairs

GuidedPractice

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

$-2y = 2$

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

$y = -1$

$3 = 3$

$0 = 5$

$-4x + -3 = -5$

$+3 \quad +3$

$-4x = 0$

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

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

$(1, 6)$

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

$y = 6$

$8x + 5 \cdot 6 = 38$

$8x + 30 = 38$

$-30 \quad -30$

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

GuidedPractice

3. Solve the system of equations.

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

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

$8b + -3 = 11$

$+3 \quad +3$

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

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

$c = -1$

(b, c)

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

$\frac{14 \div 2}{8 \div 2}$

(r, t) (4, -7)

Standardized Test Example 3

Solve the system of equations.

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

$2t + 5r = 6$

$-2t + 9r = 22$

$14r = 28$

$\frac{14r}{14} = \frac{28}{14}$

$r = 4$

$2 \cdot t + 5 \cdot 4 = 6$

$2t + 20 = 6$

$-20 \quad -20$

$2t = -14$

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

$t = -7$

Example 2 Write and Solve a System of Equations

Negative three times one number plus five times another number is −11. Three times the first number plus seven times the other number is −1. Find the numbers.

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?

Whiteboards

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

(m, p) (2, 3)

1. $5m - p = 7$

$7m - p = 11$

$5 \cdot 2 - p = 7$

$10 - p = 7$

$-10 \quad -10$

$-p = -3$

$\frac{-p}{-1} = \frac{-3}{-1}$

$p = 3$

$-2m = -4$

$\frac{-2m}{-2} = \frac{-4}{-2}$

$m = 2$

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

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

3 $7f + 3g = -6$

$7f - 2g = -31$

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