3h.
① $x + 5y = 2$
② $x - 1_{+1} = 2y_{+1}$

$x = 2y + 1$

$x + 5y = 2$

$2y + 1 + 5y = 2$

$7y + 1_{-1} = 2_{-1}$

$\frac{7y}{7} = \frac{1}{7}$

$y = \frac{1}{7}$

$x = 2y + 1$

$x = 2\left(\frac{1}{7}\right) + 1$

$x = \frac{2}{7} + \frac{7}{7}$

$x = \frac{9}{7}$

$\left(\frac{9}{7}, \frac{1}{7}\right)$

42. (x, y, z)

$2x - 3y + 4z = 8$

$3x + 2y = 7$

$x = 1$

$3(1) + 2y = 7$

$3_{-3} + 2y = 7_{-3}$

$\frac{2y}{2} = \frac{4}{2}$

$y = 2$

$2(1) - 3(2) + 4z = 8$

$2 - 6 + 4z = 8$

$-4_{+4} + 4z = 8_{+4}$

$\frac{4z}{4} = \frac{12}{4}$

$z = 3$

$(1, 2, 3)$

51. p163

$$y = 2x + 7$$

$$y = 3x + 5$$

$$2x + 7 = 3x + 5$$
$$-2x \quad -5 \qquad -2x \quad -5$$

$$2 = x$$

$$11 = y$$

3.2 Elimination

→ Addition — Coefficients of 1 variable need to be opposites

Subtraction — Coefficients of 1 variable need to be the same

$$-2x + 3y = -14$$
$$+\ 2x + 2y = \quad 4$$
$$\overline{\qquad\qquad\qquad}$$
$$5y = -10$$
$$\frac{5y}{5} = \frac{-10}{5}$$
$$y = -2$$

$$2x + 2(-2) = 4$$
$$2x - 4 + 4 = 4 + 4$$
$$\frac{2x}{2} = \frac{8}{2}$$
$$x = 4 \qquad (4, -2)$$

19. $$7b - 5c = 11$$
$$-4c - 2b = {}^-14$$

$$-4 \cdot \quad 7b - 5c = 11$$
$$5 \cdot \quad -2b - 4c = {}^-14$$

$$-28b + 20c = {}^-44$$
$$+ \quad -10b - 20c = {}^-70$$
$$\overline{}$$
$$\frac{-38b}{-38} \qquad = \frac{{}^-114}{-38}$$

$$b = 3$$
$$-2(3) - 4c = -14$$
$$-6^{+6} - 4c = -14^{+6}$$
$$\frac{-4c}{-4} = \frac{-8}{-4}$$

$$c = 2$$

$$(3,2) \qquad \text{Consistent Independent}$$

p 169

10, 12, 22, 24

$$-8x + 4y = -2$$

2. $$4x - 2y = 1$$ Same Line

$$-8x + 4y = -2$$
$$+\ \ 8x - 4y = 2$$
$$\overline{\qquad\qquad\qquad}$$
$$0 = 0 \quad \text{True}$$

Consistent Dependent

Infinitely many solutions

p169
21.

$$5x \overset{-3y+8}{-8} = 3y \overset{-3y+8}{+8}$$

$$10x - 6y = 18$$

$$5x - 3y = 8$$

$$\div -2 \quad 10x - 6y = 18$$

$$5x - 3y = 8 \quad \text{Parallel}$$
$$+\ -5x + 3y = -9 \quad \text{Lines}$$
$$\overline{\qquad\qquad\qquad}$$
$$0 = -1 \quad \text{False}$$

No Solution

Inconsistent