p. 32-33 Solving Systems by Elimination 3.2

Warm-Up: p. 32

Solve the following system by elimination

$3\cdot(2x + 7y = 4)$

$-2(3x + 5y = -5)$

$6x + 21y = 12$

$-6x - 10y = 10$

$11y = 22$

$y = 2$

$2x + 7(2) = 4$

$2x + 14 = 4$

$-14 \quad -14$

$2x = -10$

$x = -5$

Sol. $(-5, 2)$

Ck:

$3(-5) + 5(2) \stackrel{?}{=} -5$

$-15 + 10 = -5$

$-5 = -5$ ✓

What questions do you have?

Assignment p. 146 # 31, 33, 35, 38, 39

Solve each system by elimination.

See Problems 4 and 5.

31. $\begin{cases} 4x - 6y = -26 \\ -2x + 3y = 13 \end{cases}$

32. $\begin{cases} 9a - 3d = 3 \\ -3a + d = -1 \end{cases}$

33. $\begin{cases} 2a + 3b = 12 \\ 5a - b = 13 \end{cases}$

34. $\begin{cases} 2x - 3y = 6 \\ 6x - 9y = 9 \end{cases}$

35. $\begin{cases} 20x + 5y = 120 \\ 10x + 7.5y = 80 \end{cases}$

36. $\begin{cases} 6x - 2y = 11 \\ -9x + 3y = 16 \end{cases}$

37. $\begin{cases} 2x - 3y = -1 \\ 3x + 4y = 8 \end{cases}$

38. $\begin{cases} 5x - 2y = -19 \\ 2x + 3y = 0 \end{cases}$

39. $\begin{cases} r + 3s = 7 \\ 2r - s = 7 \end{cases}$

p. 33

1) A hotel has 260 rooms—some single and some doubles. The singles cost $35 and the doubles cost $60. Because of a math teachers' convention, all of the hotel rooms are occupied. The sales for this night are $14,000. How many of each type of room does the hotel have?

Use Elimination Method to Solve.

x y

$35x+60y=14000$

$-35\cdot(x+y=260)$

$35x+60y=14000$

$-35x-35y=-9100$

$25y=4900$

$y=196$

double rms.

$x+196=260$

$x=64$

single rooms

ck. $35(64)+60(196)\stackrel{?}{=}14000$

$2240+11760=14000$

$14000=14000$ ✓

Systems with many or no solutions.

2.) $(x - 3y = 7)$ -2

$2x - 6y = 12$

$\rightarrow$ $-2x+6y=-14$

$2x-6y=12$

No $0=-2$

No Solution

3.) $2x - 6y = 12$

$-5x + 15y = -30$ YES $0=0$

Infinite Solutions.

Solu...