

Name _____

5-4A Lesson Master

Questions on SPUR Objectives
See Student Edition pages 367–371 for objectives.

SKILLS Objective A

In 1-4, solve the system using the linear combination method.

1.
$$\begin{cases} 3m - 2n = 30 \\ -3m + 5n = -39 \end{cases}$$

2.
$$\begin{cases} 4x + 3y = 2.6 \\ 5x - 2y = 2.1 \end{cases}$$

3.
$$\begin{cases} 4x - y = -8 \\ -8x + 2y = 16 \end{cases}$$

4.
$$\begin{cases} 3a - b + 2c = 12 \\ 3a + b + 4c = 9 \\ a + 2b - 2c = 13 \end{cases}$$

PROPERTIES Objective D

5. For what value of k is the system $\begin{cases} 6x + ky = 9 \\ 2x - 5y = 7 \end{cases}$ inconsistent? _____

6. Suppose $k = 10$ in the system in Question 5. While solving the system on a CAS, suppose you have stored the first equation as eq1 and the second equation as eq2. Tell which variable would be eliminated if you entered each of these expressions.

a. $-(1/3)\text{eq1} + \text{eq2}$ _____

b. $\text{eq1} + 2\text{eq2}$ _____

c. $\text{eq1} + -3\text{eq2}$ _____

d. $0.5\text{eq1} + \text{eq2}$ _____

USES Objective F

7. The Indian mathematician Mahavira made up this problem around 850 CE: “The price of nine citrons and seven fragrant wood apples is 107; again, the mixed price of seven citrons and nine fragrant wood apples is 101. Oh you arithmetician, tell me quickly the price of a citron and a wood apple here, having distinctly separated these prices well.”

8. A chemist mixes A ml of a 10% solution of acid with B ml of a 50% solution. The resulting mixture has 800 ml of a solution that is 20% acid.

a. Write an equation relating A , B , and the total amount of solution. _____

b. Write an equation relating the amounts of acid in the three different solutions. _____

c. Solve your system to find how much of each solution was used.