Name ______________________ Class ____________ Date ____________

6-3 Practice

Form K

Solving Systems Using Elimination

Solve each system using elimination.

1. $x + y = 7$
$x - y = 3$ **(5, 2)**

2. $2x + y = -5$
$3x - y = -10$ **(−3, 1)**

3. $x + 3y = 4$
$-x + 2y = -4$ **(4, 0)**

4. $2x + 3y = -12$
$-2x + y = 4$ **(−3, −2)**

5. $x - 3y = 27$
$3x - 3y = 39$ **(6, −7)**

6. $4x + 2y = 2$
$3x + y = 4$ **(3, −5)**

7. Writing Solve the system $\begin{aligned} 3x + y &= 5 \\ -2x - y &= -5 \end{aligned}$ using elimination. Explain how you can check the solution both algebraically and graphically.
(0, 5); You can check the solution algebraically by substituting $x = 0$ and $y = 5$ into both of the original equations. You can check the solution graphically by seeing if the two lines intersect at (0, 5).

8. Open-Ended Write a system of equations that can be solved using elimination without multiplication.
Answers may vary. For example,
$x + y = 3$
$x - y = 1$

9. There are 72 members of the show choir. There are 6 more boys than girls in the choir.

a. Write the model of a system for the above situation. $b + g = 72$
$b - g = 6$

b. Do you need to multiply any of the equations by a constant before solving by elimination? Explain.
No, the *g*-variable can be eliminated without multiplying either equation.

10. Writing Explain the process you use to determine which variable is the best variable to eliminate in a system of two equations in two variables.
First check to see if either variable can be eliminated simply by adding or subtracting the two original equations. If not, see if either variable can be eliminated by just multiplying one equation by a constant and adding the equations together. If this is not possible, then multiply both equations by a constant such that one of the variables will be eliminated when the resulting equations are added.

6-3 Practice (continued) *Form K*

Solving Systems Using Elimination

11. The sum of two numbers is 19, and their difference is 55. What are the two numbers? **−18 and 37**

12. For the fundraiser, Will sold 225 candy bars. He earns \$1 for each almond candy bar he sells and \$0.75 for each caramel candy bar he sells. If he earned a total of \$187.50, how many of each type of candy bar did he sell for the fundraiser? **150 caramel and 75 almond**

13. There were 155 people at the basketball game. Tickets for the game are \$2.50 for students and \$4 for adults. If the total money received for admission was \$492.50, how many students and adults attended the game?
85 students and 70 adults

14. Jocelyn has \$1.95 in her pocket made up of 27 nickels and dimes. How many of each type of coin does she have? **12 dimes and 15 nickels**

Solve each system using elimination. Tell whether the system has *one solution, infinitely many solutions*, or *no solution*.

15. $x - 2y = -1$
$2x + y = 4$
one solution; $\left(1\frac{2}{5}, 1\frac{1}{5}\right)$

16. $x + 3y = 4$
$2x - 6y = 8$
one solution; (4, 0)

17. $y = -\frac{1}{2}x - 3$
$x + 2y = -6$
infinitely many solutions

18. $6x - 3y = -18$
$-2x + 4y = 18$
one solution; (−1, 4)

19. $2x - 8y = -16$
$y = \frac{1}{4}x - 2$
no solution

20. $3x - y = -1$
$y = 3x - 5$
no solution

21. $2x - y = 3$
$5x + 2y = 30$
one solution; (4, 5)

22. $12x - 8y = 18$
$6x = 4y + 9$
infinitely many solutions