Practice Chapter 6 Test

Name _____ Date _____

On a separate sheet of paper, graph each system of equations. Find the number of solutions and describe the system.

1. $\begin{cases} 3x + 2y = -12 \\ 12x + 8y = 16 \end{cases}$ **2.** $\begin{cases} y = -\frac{2}{3}x + 1 \\ 4x + 6y = 6 \end{cases}$ **3.** $\begin{cases} 3x - y = -9 \\ 2x + y = -11 \end{cases}$

_____ _____ _____

Solve each system of equations by substitution. Check your answer.

4. $\begin{cases} y = x + 1 \\ 4x + 3y = 17 \end{cases}$ **5.** $\begin{cases} x - 2y = 2 \\ 4x + 5y = -18 \end{cases}$ **6.** $\begin{cases} 4x - 2y = -34 \\ 4x + 7y = 29 \end{cases}$ **7.** $\begin{cases} 20x - 6y = 0 \\ 3x - 2y = -22 \end{cases}$

_____ _____ _____ _____

Solve each system of equations by elimination. Check your answer.

8. $\begin{cases} 3x + y = 19 \\ 2x + y = 8 \end{cases}$ **9.** $\begin{cases} 3y - 0.1 = 2x \\ 2x = 4y \end{cases}$ **10.** $\begin{cases} m + n = \frac{23}{12} \\ m - n = \frac{17}{12} \end{cases}$ **11.** $\begin{cases} 7c - 9d = -88 \\ 7c - 29 = -4d \end{cases}$

_____ _____ _____ _____

Solve each system of equations by addition or subtraction. Check your answer.

12. $\begin{cases} 9x + 2y = 44 \\ 7x - 5y = 8 \end{cases}$ **13.** $\begin{cases} 3x + 5y = -34 \\ 5x - 2y = -36 \end{cases}$ **14.** $\begin{cases} 3y = -5 - x \\ 3x = 10 - 4y \end{cases}$ **15.** $\begin{cases} 10x + 5y = -8 \\ 4x + 3 = -3y \end{cases}$

_____ _____ _____ _____

Use after SOURCEBOOK Lessons 6-1–6-6, pages 150–165.

Solve each problem by writing and solving a system of linear equations.

16. A jar contains \$16.10 in nickels and quarters. The number of quarters is 6 less than twice the number of nickels. How many nickels and how many quarters are in the container?

17. The sum of two integers is 7. The greater integer is 58 more than twice the lesser integer. What are the integers?

Graph each system of inequalities on a separate sheet of paper. Find whether the given ordered pair is a solution of the system.

18. $\begin{cases} 3x - y < -4 \\ 2x + 3y \geq 18 \end{cases}$ $(-2, 7)$

19. $\begin{cases} 4y \leq 32 - 3x \\ 5x + 2y \geq 24 \end{cases}$ $(8, 2)$

20. $\begin{cases} x + y \leq 6 \\ x + y \geq -6 \end{cases}$ $(-2, -1)$

Problem Solving

21. Cooking You must buy peas and cucumbers for a recipe. Peas cost \$1.25/lb. Cucumbers cost \$1.75/lb. You want to spend less than \$11.25 and need more than 5 lb altogether. If you also need 2 lb of cucumbers, list three amounts of peas you could buy.

22. Watch Production A factory produces both metal and plastic wristwatches. Metal watches take 10.5 h to make. Plastic watches take 6.3 h. The number of work hours at the factory is limited to 945 h per week, and the factory can produce no more than 120 watches per week. What is the greatest number of each type of watch the factory can produce per week?

Tell About It

Explain how you solve the problem. Show all your work.

23. How can you determine, without graphing, whether $(-1, 3)$ and $(1, -3)$ are solutions of the system of inequalities?

$\begin{cases} 3x + 2y \leq 5 \\ 4x - 5y \geq -1 \end{cases}$