**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_Period:\_\_\_\_\_\_\_\_\_\_\_**

**Solving Systems of Equations by Substitution**

**Worksheet 412**

**Use substitution to solve each system of equations. If the system does not have exactly one solution, state whether it has no solution or infinitely many solutions.**

**1.** *y* = 6*x* **2.** *x* = 3*y* **3.** *x* = 2*y* + 7

 2*x* + 3*y* = –20 3*x* – 5*y* = 12 *x* = *y* + 4

**4.** *y* = 2*x* – 2 **5.** *y* = 2*x* + 6 **6.** 3*x* + *y* = 12

 *y* = *x* + 2 2*x* – *y* = 2 *y* = –*x* – 2

**7.** *x* + 2*y* = 13 **8.** *x* – 2*y* = 3 **9.** *x* – 5*y* = 36

 –2*x* – 3*y* = –18 4*x* – 8*y* = 12 2*x* + *y* = –16

**10.** 2*x* – 3*y* = –24 **11.** *x* + 14*y* = 84 **12.** 0.3*x* – 0.2*y* = 0.5

 *x* + 6*y* = 18 2*x* – 7*y* = –7  *x* – 2*y* = –5

**13.** 0.5*x* + 4*y* = –1 **14.** 3*x* – 2*y* = 11 **15.** $\frac{1}{2}$*x* + 2*y* = 12

 *x* + 2.5*y* = 3.5 *x* $-\frac{1}{2}y$= 4 *x* – 2*y* = 6

**16.** $\frac{1}{3}$*x* – *y* = 3 **17.** 4*x* – 5*y* = –7 **18.** *x* – 3*y* = –4

 2*x* + *y* = 25 *y* = 5*x* 2*x* + 6*y* = 5

**EMPLOYMENT For exercises 19-21, use the following information.**

Kenisha sells athletic shoes part-time at a department store. She can earn either $500 per month plus a 4% commission on her total sales, or a $400 per month plus a 5% commission on total sales.

**19.** Write a system of equations to represent the situation.

**20.** What is the total price of the athletic shoes Kenisha needs to sell to earn the same income from each pay scale?

**21.** Which is the better offer?