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6-5 Applying Systems of Linear Equations

Determine the best method to solve each system of equations. Then solve the system.

1. $5x + 3y = 16$
$3x - 5y = -4$

(2, 2)

2. $3x - 5y = 7$
$2x + 5y = 13$

(4, 1)

3. $y = 3x - 24$
$5x - y = 8$

(4, 12)

4. $-11x - 10y = 17$
$5x - 7y = 50$

(3, -5)

5. MONEY Veronica has been saving dimes and quarters. She has 94 coins in all, and the total value is \$19.30. How many dimes and how many quarters does she have?

$x + y = 94$
$.10x + .25y = 19.30$

28 dimes
66 quarters

6. VEGETABLE STAND A roadside vegetable stand sells pumpkins for \$5 each and squashes for \$3 each. One day they sold 6 more squash than pumpkins, and their sales totaled \$98. Write and solve a system of equations to find how many pumpkins and quash they sold?

$y = 6 + x$
$5x + 3y = 98$

10 pumpkins
16 squashes

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7. $4x + y = 24$
$5x - y = 12$

(4, 8)

8. $6x - y = -145$
$x = 4 - 2y$

(−22, 13)

9. INCOME Ramiro earns $20 per hour during the week and $30 per hour for overtime on the weekends. One week Ramiro earned a total of $650. He worked 5 times as many hours during the week as he did on the weekend. Write and solve a system of equations to determine how many hours of overtime Ramiro worked on the weekend.

$20x + 30y = 650$
$x = 5y$
5 hours

10. BASKETBALL Anya makes 14 baskets during her game. Some of these baskets were worth 2 points and others were worth 3 points. In total, she scored 30 points. Write and solve a system of equations to find how many 2-point baskets she made.

$x + y = 14$
$2x + 3y = 30$
12

11. PRODUCE Roger and Trevor went shopping for produce on the same day. They each bought some apples and some potatoes. The amount they bought and the total price they paid are listed in the table below.

	Apples (lb)	Potatoes (lb)	Total Cost ($)
Roger	8	7	18.85
Trevor	2	10	12.88

What was the price of apples and potatoes per pound?

apples $1.49/lb
potatoes $0.99/lb

$8a + 7p = 18.85$
$2a + 10p = 12.88$