Name_____ Date_____

Unit 3 **Lesson 9**

AIM: Solving word problems involving systems of equations

Let's think.....

1. A whopper and a small fry eaten together are 850 calories. How can we represent this as an equation?

Let w = # of calories in a whopper

Let f = # of calories in small fries

$w + f = 1070$

2. Aiden is starving. He eats two whoppers and two small fries for a total of 1700 calories. How can we represent this as an equation?

$2w + 3f = 1920$

3. Let's determine the amount of calories in one whopper and the amount of calories in small fries.

$-2(w + f = 1070)$

$2w + 3f = 2480$

$-2w - 2f = -2140$

$2w + 3f = 2480$

$f = 340$

$w + f = 1070$

$w + 340 = 1070$

$-340 \quad -340$

$w = 730$

4. Skyler's and her friends wanted to win most school spirited at the prep rally. She purchased three shirts and four hats for $66 from the Calhoun's stable. How can we represent this as an equation?

Let s = cost of shirts

Let h = cost of hats

$$3s + 4h = 66$$

5. Fallon got a head start on her holiday shopping at Calhoun's stable. She purchased seven shirts and three hats for $116. How can we represent this as an equation?

$$7s + 3h = 116$$

6. Let's determine the cost of one shirt and the cost of one hat.

$3(3s + 4h = 66)$

$-4(7s + 3h = 116)$

$9s + 12h = 198$

$-28s - 12h = -464$

$\frac{-19s}{-19} = \frac{-266}{-19}$

$\boxed{s = 14}$

$3s + 4h = 66$

$3(14) + 4h = 66$

$42 + 4h = 66$

$-42 \quad -42$

$\frac{4h}{4} = \frac{24}{4}$

$\boxed{h = 6}$

7. Ms. Rohr went food shopping last night and she purchased two gallons of milk and three loaves of bread for $8.25. How can we represent this as an equation?

Let m = cost of milk

Let b = cost of bread

$2m + 3b = 8.25$

8. Ms. Cronin went food shopping last night and she purchased five gallons of milk and two loaves of bread for $13.75. How can we represent this as an equation?

$5m + 2b = 13.75$

9. Let's determine the cost of one gallon of milk and the cost of one loaf of bread.

$-2(2m + 3b = 8.25)$

$3(5m + 2b = 13.75)$

$-4m - 6b = -16.5$

$15m + 6b = 41.25$

$\frac{11m}{11} = \frac{24.75}{11}$

$m = 2.25$

$2(2.25) + 3b = 8.25$

$4.5 + 3b = 8.25$

$-4.5 \quad -4.5$

$\frac{3b}{3} = \frac{3.75}{3}$

$b = 1.25$

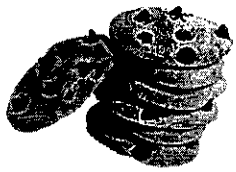
10. At Calhoun's bake sale, Dren bought three brownies and five cookies, and paid $10.50. How can we represent this as an equation?

Let b = cost of brownies
Let c = cost of cookies

$3b + 5c = 10.50$

11. At the same prices, Dylan bought four brownies and eight cookies, and paid $14.80. How can we represent this as an equation?

$4b + 8c = 14.80$



12. Determine the price of a brownie and the price of a cookie?

$4(3b + 5c = 10.50)$
$-3(4b + 8c = 14.80)$

$12b + 20c = 42$
$-12b - 24c = -44.4$

$\frac{-4c}{-4} = \frac{-2.4}{-4}$

$c = .60$

$3b + 5c = 10.50$
$3b + 5(.60) = 10.50$
$3b + 3 = 10.50$
$-3 \quad -3$

$3b =$