

2.9 HW Weighted Averages

1. SEASONING A health food store sells seasoning blends in bulk. One blend contains 20% basil. Sheila wants to add pure basil to some 20% blend to make 16 ounces of her own 30% blend. Let b represent the amount of basil Sheila should add to the 20% blend.

a. Complete the table representing the problem.

	Ounces	Amount of Basil
20% Basil Blend		
100% Basil		
30% Basil Blend		

b. Write an equation to represent the problem.

c. How many ounces of basil should Sheila use to make the 30% blend?

d. How many ounces of the 20% blend should she use?

2. HIKING At 7:00 A.M., two groups of hikers begin 21 miles apart and head toward each other. The first group, hiking at an average rate of 1.5 miles per hour, carries tents, sleeping bags, and cooking equipment. The second group, hiking at an average rate of 2 miles per hour, carries food and water. Let t represent the hiking time.

a. Copy and complete the table representing the problem.

	r	t	$d = rt$
First group of hikers			
Second group of hikers			

b. Write an equation using t that describes the distances traveled.

c. How long will it be until the two groups of hikers meet?

3. SALES Sergio sells a mixture of Virginia peanuts and Spanish peanuts for \$3.40 per pound. To make the mixture, he uses Virginia peanuts that cost \$3.50 per pound and Spanish peanuts that cost \$3.00 per pound. He mixes 10 pounds at a time.

a. How many pounds of Virginia peanuts does Sergio use?

b. How many pounds of Spanish peanuts does Sergio use?

4. GRASS SEED A nursery sells Kentucky Blue Grass seed for \$5.75 per pound and Tall Fescue seed for \$4.50 per pound. The nursery sells a mixture of the two kinds of seed for \$5.25 per pound. Let k represent the amount of Kentucky Blue Grass seed the nursery uses in 5 pounds of the mixture.

a. Complete the table representing the problem.

	Number of Pounds	Price per Pound	Cost
Kentucky Blue Grass			
Tall Fescue			
Mixture			

b. Write an equation to represent the problem.

c. How much Kentucky Blue Grass does the nursery use in 5 pounds of the mixture?

d. How much Tall Fescue does the nursery use in 5 pounds of the mixture?

5. TRAVEL Two commuter trains carry passengers between two cities, one traveling east, and the other west, on different tracks. Their respective stations are 150 miles apart. Both trains leave at the same time, one traveling at an average speed of 55 miles per hour and the other at an average speed of 65 miles per hour. Let t represent the time until the trains pass each other.

a. Copy and complete the table representing the problem.

	r	t	$d = rt$
First Train			
Second Train			

b. Write an equation using t that describes the distances traveled.

c. How long after departing will the trains pass each other?

6. TRAVEL Two trains leave Raleigh at the same time, one traveling north, and the other south. The first train travels at 50 miles per hour and the second at 60 miles per hour. In how many hours will the trains be 275 miles apart?

7. JUICE A pineapple drink contains 15% pineapple juice. How much pure pineapple juice should be added to 8 quarts of the pineapple drink to obtain a mixture containing 50% pineapple juice?