Math

6.4 Applications of Linear Systems - Mixture Problems – (D2)

SWBAT translate a mixture word problem into a system of linear equations and solve.

Solving a Mixture Problem

Step 1: _____ the problem
Step 2: Underline or highlight the _____
Step 3: Define one variable based on the _____ of which is being asked
Step 4: _____like the one to the right
Step 5: Solve for _____!

	Percent	Amt	
Mixture A			
Mixture B			
Total			

1. A dairy owner produces low-fat milk containing 1% fat and whole milk containing 3.5% fat. How many gallons of each type should be combined to make 100 gal of milk that is 2% fat?

Set Up: **Table:**

Let _____ = _____

	Percent	Amt	
Mixture A			
Mixture B			
Total			

2. One antifreeze solution is 20% alcohol. Another antifreeze solution is 12% alcohol. How many liters of each solution should be combined to make 15 L of antifreeze solution that is 18% alcohol?

Set Up: **Table:**

Let _____ = _____

	Percent	Amt	
Mixture A			
Mixture B			
Total			

3. John is making punch. How many cups of 50% juice should he add to a drink that contains 10% juice if he wants to make 15 cups of punch containing 20% juice? (How many cups of each drink)

Set Up: **Table:**

Let _____ = _____

	Percent	Amt	
Mixture A			
Mixture B			
Total			

4. You combine a 10% saltwater mixture with a 40% saltwater mixture to create 6 gallons of a 30% saltwater solution. How many gallons of each mixture did you use?

Set Up: **Table:**

Let _____ = _____

	Percent	Amt	
Mixture A			
Mixture B			
Total			

5. Margaret is making fruit punch. She has juice drink that contains 25% orange juice. How much pure orange juice will she need to combine with the drink to make 17 quarts of a drink that is 60% orange juice?

Set Up:

Let _____ = _____

Table:

	Percent	Amt	
Mixture A			
Mixture B			
Total			

6. How much of a 90% solution of acid should be added to a 60% acid solution to create a 5-liter solution that contains 70% acid?

Set Up:

Let _____ = _____

Table:

	Percent	Amt	
Mixture A			
Mixture B			
Total			

7. You split $1500 between two savings accounts. Account A pays annual 5% interest and Account B pays 4% annual interest. After one year, you have earned a total of $69.50 in interest. How much money did you invest in each account?

Set Up:

Let _____ = _____

Table:

	Percent	Amt	
Mixture A			
Mixture B			
Total			

8. A metal worker has a metal alloy that is 20% copper and another alloy that is 60% copper. How many kilograms of each alloy should the metalworker combine to create 80 kg of a 52% copper alloy?

Set Up:

Let _____ = _____

Table:

	Percent	Amt	
Mixture A			
Mixture B			
Total			

9. A scientist has a container of 2% acid solution and a container of 5% acid solution. How many fluid ounces of each concentration should be combined to make 25 fl oz. of 3.2% acid solution?

Set UP

Let _____ = _____

Table

	Percent	Amt	
Mixture A			
Mixture B			
Total			

10. A dealer wishes to obtain 50 pounds of mixed cookies to sell for $1.00 per pound. If he mixes cookies worth $1.20 per pound with cookies worth $.70 per pound, find the number of pounds of each kind of cookie he should use.

Set UP

Let _____ = _____

Table

	Percent	Amt	
Mixture A			
Mixture B			
Total			

11. A farmer has some cream which is 24% butterfat and some cream which is 18% butterfat. How many quarts of each must be used to produce 90 quarts of cream which is 22% butterfat?

Set UP

Let _____ = _____

Table

	Percent	Amt	
Mixture A			
Mixture B			
Total			

12. How much pure acid must be added to 15 ounces of an acid solution which is 40% acid in order to produce a solution which is 50% acid?

Set UP

Let _____ = _____

Table

	Percent	Amt	
Mixture A			
Mixture B			
Total			

13. For her advisee party, Mary went to Kandy-Korner and purchased 2 pounds of a mixture of hard candy. The butter scotch drops were $2.50 per pound and the strawberry stars were $3.75 per pound. How many pounds of each candy did Mary have if the entire mixture cost $5.50?

Set UP

Let _____ = _____

Table

	Percent	Amt	
Mixture A			
Mixture B			
Total			

14. How much of a 10% saline solution should be mixed with a 20% saline solution to obtain 100ml of a 12% saline solution?

Set UP

Let _____ = _____

Table

	Percent	Amt	
Mixture A			
Mixture B			
Total			