Algebra 1 Name _____

1-2b Work & Mixture Problems Date _____ **A#5-6**

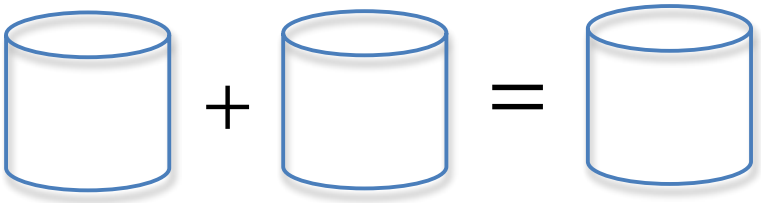
Goal:		
Prerequisite: Convert decimal time to practical time.	**Ex A:** 2.4 hours = _____	**Ex B:** 3.8 weeks = _____

Work Problems Equation

Ex C: You and your sister must rake leaves in the backyard. You can do the job by yourself in 2 hrs. Your sister can do the job in 3 hrs. How long will it take to rake the leaves together?	1. You and your brother must clean the house. You can clean the house in 4 hours and he can do the same in 7 hours. How long will it take for you to clean it together?
2. Batman can clean up trash in Gotham City in 5 days. Superman can do the same job in 3 days. How many days will it take them to clean up crime together?	3. Batman can clean up all of the crime in Gotham City in 8 hours working alone. Robin can do the same job in 12 hours working alone. How long will it take for both of them to clean up the city?
4. Hafiz can wash a car in 40 minutes and Gertrude can wash the same car in 25 minutes. If they start at 7:00 am, approximately what time will they be finished if they work together?	5. Hafiz can wash a car in 60 minutes and Gertrude can wash the same car in 45 minutes. If they start at 10:00 am, approximately what time will they be finished if they work together?

Algebra 1
1-2b Work & Mixture Problems **A#5-6**

1. How many liters of a 14% alcohol solution must be mixed with 20L of a 50% alcohol solution to get a 20% alcohol solution?



2. How many gallons of pure oil should be added to 12 gal of a 12% oil solution to make a 34% oil solution?

Volume		+		=	
Percent					
Total oil					

3. Chocolate coffee beans sell for $7.00 per pound and hazelnut coffee beans sell for $6.10 per pound. One customer wants a 6-pound mixture of both types of coffee. How many pounds of each should be used if the mixture is to cost $6.40 per pound?

4. A grocer has two kinds of nuts. One costs $5/kg and another costs $4.20/kg. How many kilograms of each type of nut should be mixed in order to get 60 kg of a mixture worth $4.80/kg?

Identify the type of problem. Then solve.

1. Hafiz can wash a car in 40 minutes and Gertrude can wash the same car in 30 minutes. If they start at 9:00 am, approximately what time will they be finished if they work together?

2. The manager of a candy shop sells chocolate covered peanuts for $8 per pound and chocolate covered cashews for $14 per pound. The manager wishes to mix 50 pounds of cashews to get a cashew-peanut mixture that will sell for $9 per pound?

3. Raymond has 20 ounces (oz) of a 20% salt solution. How much water must be added in order to make it a 15% salt solution?

4. Johanna works twice as fast as Belinda when painting a room. How long will it take for them to paint the room together if Belinda can paint it in 8 hours?

5. Milk that has 5% butterfat is mixed with milk that has 2% butterfat. How much of each is needed to obtain 60 gallons of milk that has 3% butterfat?

6. A pharmacist mixed some 10%-saline solution with some 15%-saline solution to obtain 100 mL of a 12%-saline solution. How much of the 10%-saline solution did the pharmacist use in the mixture?

Algebra 1

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Convert each fraction into practical form (e.g., 2h 40m).

1. $\frac{11}{4}$ hr **2.** $\frac{20}{3}$ days **3.** $\frac{13}{6}$ min

Determine if the problem is a rate, work or mixture problem. Then solve using any method.

7. Superman can clean up all of the graffiti in Metropolis in 15 hours working alone. Wonder Woman can do the same job in 18 hours working alone. How long will it take for both of them to clean up the city?

8. Hafiz can wash a car in 2 hours and Gertrude can wash the same car in 5 hours. If they start at 9:00 am, approximately what time will they be finished if they work together?

9. Batman can clean up crime in Gotham City in 7 days. Superman can do the same job in 3 days. How many day will it take them to clean up crime together?

10. Jacob works twice as fast as Cody when painting a room. How long will it take for them to paint the room together if Cody can do it in 10 hours?