Mixture Problems – Day 3
Unit 5: Real World Applications

Solve each question. Round your answer to the nearest hundredth when needed.

1. 4 kg of Jill's special coffee blend was made by combining 3 kg of brand X coffee which costs $7/kg with 1 kg of brand Y coffee which costs $15/kg. Find the cost per kg of the mixture.

2. 2 m^3 of soil containing 40% clay was mixed into 1 m^3 of soil containing 10% clay. What is the clay content of the mixture?

3. A metal alloy weighing 12 mg and containing 10% gold is melted and mixed with 3 mg of a different alloy which contains 20% gold. What percent of the resulting alloy is gold?

4. For her birthday party Lea mixed together 2 gal. of Brand A punch and 6 gal. of Brand B. Brand A contains 6% fruit juice and Brand B contains 18% fruit juice. What percent of the mixture is fruit juice?

5. How much of Brand A fruit punch (30% fruit juice) must be mixed with 3 gal. of Brand B fruit juice (40% fruit juice) to create a mixture containing 36% fruit juice?

6. How much of Brand A fruit punch (15% fruit juice) must be mixed with 4 gal. of Brand B fruit punch (50% fruit juice) to create a mixture containing 25% fruit juice?

7. How many L of a 45% sugar solution must be mixed with 9 L of a 15% sugar solution to make an 18% solution?

8. How many lbs. of a metal containing 24% platinum must be combined with 2 lbs. of pure platinum to form an alloy containing 43% platinum?

9. Chelsea and her brother mixed together two types of soil to make 10 m^3 of soil with a 46% silt content. They used 2 m^3 of a soil with 50% slit content and 8 m^3 of another type of soil. What was the silt content of the second type of soil?

10. Matt created a metal containing 64% copper by combining 5 mg of pure copper with 4 mg of another metal. What percent of the other metal was copper?

11. Amy created a metal containing 78% silver by combining two other metals. One of these metals weighed 8 oz. and contained 90% silver. If the other weighed 12 oz., then what percent of it was silver?

12. Bill and his brother mixed together two types of soil to make 12 m^3 of soil with a 30% clay content. They used 8 m^3 of a soil with 20% clay content and 4 m^3 of another type of soil. What was the clay content of the second type of soil?

13. Aliyah wants to make 10 gal. of a 68% alcohol solution by mixing together a 35% alcohol solution and a 90% alcohol solution. How much of each solution must she use?

14. To build the garden of your dreams you need 12 yd^3 of soil containing 40% sand. You have two types of soil you can combine to achieve this: soil with 50% sand and soil with 10% sand. How much of each soil should you use?

15. To build the garden of your dreams you need 13 ft^3 of soil containing 55% silt. You have two types of soil you can combine to achieve this: soil with 35% silt and pure silt. How much of each soil should you use?

16. Mixed nuts which cost $4/oz. are made by combining walnuts which cost $6/oz. with peanuts which cost $3/oz. Find the number of oz. of walnuts and peanuts required to make 6 oz. of mixed nuts.

17. Kim asked you to make 10 L of fruit punch that contains 26% fruit juice by mixing together some amount of Brand A fruit punch and some amount of Brand B fruit punch. Brand A contains 20% fruit juice and Brand B contains 40% fruit juice. How much of each do you need?

18. A metallurgist needs to make 15 lbs. of an alloy containing 66% nickel. She is going to melt and combine one metal that is 30% nickel with another metal that is 75% nickel. How much of each should she use?