

Chapter 2 Word Problems Name _____

A

Solve each problem.

5. Adrienne has 5 more dimes than nickels. In all, she has \$2.30. How many nickels does she have?
6. Lois has 27 coins in nickels and dimes. In all she has \$1.90. How many of each does she have?
7. Jeanne Ramos has 53 coins in pennies and nickels with a value of \$1.37. How many coins of each does she have?
8. Tim has twice as much money in nickels as in dimes. He has 30 coins in all. How many of each coin does he have?
9. How many pounds of apples costing 64¢ per pound must be added to 30 pounds of apples costing 49¢ per pound to create a mixture that would sell for 58¢ per pound?
10. Ground chuck sells for \$1.75 a pound. How many pounds of ground round selling for \$2.45 a pound should be mixed with 20 pounds of ground chuck to obtain a mixture that sells for \$2.05 a pound?
11. Drew has twice as many quarters as nickels and three more dimes than nickels. He has \$4.20 in all. How many of each does he have?
12. Gary has 42 coins in nickels, dimes, and quarters. If he has 8 more nickels than dimes and has \$7.15 in all, how many of each does he have?
13. On the first day of school, 264 notebooks were sold. Some sold for 95¢ each and the rest sold for \$1.25 each. How many of each were sold if the total sales were \$297.00?
14. Fred Suter bought tickets to the Olympic Games. Some tickets cost \$5 and the others cost \$8. He paid \$101 for 16 tickets. How many of each did he buy?
15. How much coffee that costs \$3 a pound should be mixed with 5 pounds of coffee that costs \$3.50 a pound to obtain a mixture that costs \$3.25 a pound?
16. Theatre tickets cost \$2.50 for children and \$3.50 for adults. The price for 8 tickets was \$23.00. How many adult tickets were purchased?
17. The Kulichs are going to Cedar Island, an amusement park, for a family outing. The total cost of tickets for a family of two adults and three children is \$61.75. If a child's ticket costs \$6.00 less than an adult ticket, find the cost of each.

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- Part C
9. Rosita drives from Boston to Cleveland, a distance of 616 miles. Her rest, gasoline, and food stops amount to 2 hours. What was her rate if the trip took 16 hours?
 10. At the same time Kris leaves Washington, D.C., for Detroit, Amy leaves Detroit for Washington, D.C. The distance between the cities is 510 miles. Amy drives 5 mph faster than Kris. How fast is Kris driving if they pass each other in 6 hours?
 11. Two cyclists are traveling in the same direction on the same course. One travels 20 mph and the other 14 mph. After how many hours will they be 15 miles apart?
 12. Hana leaves at 10:00 A.M., traveling at 50 mph. At 11:30 A.M., Yong starts in the same direction at 45 mph. When will they be 100 miles apart?
 13. Boat A leaves the pier at 9:00 A.M., at 8 knots (nautical miles per hour). A half hour later, Boat B leaves the same pier in the same direction traveling at 10 knots. At what time will Boat B overtake Boat A?
 14. Bob is driving 40 mph. After Bob has driven 30 miles, Jack starts driving in the same direction. At what rate must Jack drive to catch up to Bob in 5 hours?
 15. An express train travels 80 km/h from Wheaton to Whitfield. A passenger train, traveling 48 km/h, takes 2 hours longer for the same trip. How far apart are Wheaton and Whitfield?
 16. Kenny Brown drives to town at 36 mph and returns at 48 mph. If his total driving time is $3\frac{1}{2}$ hours, how far is his home from town?

17. Two airplanes leave Dallas at the same time and fly in opposite directions. One plane travels 80 mph faster than the other. After three hours, they are 2940 miles apart. What is the rate of each plane?
18. Jackson runs a 440 yard run in 55 seconds and Rey runs it in 88 seconds. To have Jackson and Rey finish at the same time, how many yards headstart should Rey be given?
19. At 1:30 P.M., a plane leaves Tucson for Baltimore, a distance of 2240 miles. The plane flies 280 mph. A second plane leaves Tucson at 2:15 P.M., and is scheduled to land in Baltimore 15 minutes before the first plane. At what rate must the second plane travel to arrive on schedule?
20. Sherry leaves Columbus, Ohio, on a train traveling 70 mph to Dallas. Twelve hours later, Soto leaves Columbus by plane traveling 500 mph to Dallas. If Columbus and Dallas are 1050 miles apart, will Soto arrive before or after Sherry?

Part B

Solve each problem.

5. A chemist has 2.5 liters of a solution that is 70% acid. How much water should be added to obtain a 50% acid solution?
6. How much pure copper must be added to 50.255 kg of an alloy containing 12% copper to raise the copper content to 21%?
7. How many grams of salt must be added to 40 grams of a 28% salt solution to obtain a 40% salt solution?
8. A liter of cream has 9.2% butterfat. How much skim milk containing 2% butterfat should be added to the cream to obtain a mixture with 6.4% butterfat?
9. Marcos has 50.075 mL of a 60% solution of silver nitrate. How many milliliters of a 30% silver nitrate solution should be added to obtain a 50% solution?
10. A pharmacist has 150 dL of a 25% solution of peroxide in water. How many deciliters of peroxide should be added to obtain a 40% solution?
11. An aluminum alloy containing 48% aluminum is to be made by combining 30% and 60% alloys. How many pounds of the 60% alloy must be added to 24 pounds of the 30% alloy to produce the desired alloy?
12. A car radiator has a capacity of 16 quarts and is filled with a 25% antifreeze solution. How much must be drained off and replaced with pure antifreeze to obtain a 40% antifreeze solution?
13. Yolanda invested a portion of \$12,500 at 6.2% interest and the balance at 8.6% interest. How much did she invest at each rate if her total income from both investments is \$967?
14. Setsu Yamamoto invested \$33,600, part at 5% interest and the remainder at 8% interest. If she earned twice as much from her 5% investment as her 8% investment, how much did she invest at each rate?
15. A solution is 50% alcohol. If 10 liters are removed from the solution and replaced with 10 liters of alcohol, the resulting solution is 75% alcohol. How many liters of the solution are there?
16. A stockbroker has invested part of \$25,000 at 10.5% interest and the rest at $12\frac{1}{4}\%$ interest. If the annual income earned from these investments is \$2,843.75, find the amount invested at each rate.