

Name:  
Instructor:

Date:  
Section:

### Practice Set 4.3

#### Problem Solving.

1. The combined land area of the countries of Haiti and the Dominican Republic is 29,300 square miles. The Dominican Republic is larger by 8100 square miles. Find the area of each country. 1. \_\_\_\_\_  
\_\_\_\_\_
  
2. Weston IGA rents rug shampooers and power washers. Two plans are available. The \$40 Plan rents the rug shampooer and power washer together for 4 hours each. The \$42 Plan rents the rug shampooer for 3 hours and the power washer for 6 hours. Find the cost per hour for the rental of each appliance. 2. \_\_\_\_\_  
\_\_\_\_\_
  
3. Dr. Tim Newman can format 3 CD-RWs and 2 DVDs in 49 minutes. On the same computer he can format 5 CD-RWs and 3 DVDs in 75 minutes. How long does it take his computer to format one CD-RW and one DVD? 3. \_\_\_\_\_  
\_\_\_\_\_
  
4. The Tatems are boating on the Chesapeake Bay. They travel at an average speed of 15 knots when traveling with the current and 12 knots when traveling against the current. Find the speed of the boat in still water and the speed of the current. 4. \_\_\_\_\_  
\_\_\_\_\_
  
5. Dempsy Schuster sells vacuum cleaners door-to-door. He receives a weekly salary plus a commission which is a percentage of his sales. One week, with sales of \$2000, his take-home pay was \$500. The next week, with sales of \$1500, his take-home pay was \$425. Find his weekly salary and his commission rate. 5. \_\_\_\_\_  
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6. The sum of the voltages of two connected dry-cell batteries is 10.5 V. If one of the batteries is reversed, the difference in their voltage is 1.5 V. Find the voltage of each battery. 6. \_\_\_\_\_  
\_\_\_\_\_
  
7. Heather leaves her Virginia Beach home and begins rollerblading on the boardwalk at a rate of 4 miles per hour. Ten minutes later her husband Sam realizes that she has forgotten her epinephrine kit and rides his bicycle at 9 miles per hour to catch her. How long after Sam leaves the house will he catch up to Heather? How far from home are they? 7. \_\_\_\_\_  
\_\_\_\_\_
  
8. Marianne Root is mixing a homemade window cleaner which will contain 2 cups of 45% isopropyl alcohol. She will need to mix a 30% isopropyl alcohol solution with a 50% isopropyl alcohol solution. How many cups of each are needed? 8. \_\_\_\_\_  
\_\_\_\_\_

9. Mabel Underwood is making homemade soap which requires a 32.5% lye solution to saponify (set up). She needs to mix a 27.5% solution with a 40% solution to obtain 8.6 ounces of 32.5% solution. How many ounces of each will she need to mix? 9. \_\_\_\_\_  
\_\_\_\_\_

10. Pat Hausman is donating cookies for a local blood drive. She is keeping a record of how much she spends. To make shortbread cookies she purchased 5 pounds of sugar and 5 pounds of flour for \$4.25. To make chocolate chip cookies she purchased 2 pounds of sugar and 6 pounds of flour for \$3.30. What was the cost per pound for the sugar and the flour? 10. \_\_\_\_\_  
\_\_\_\_\_

11. Thurman William's Paint Shop is mixing paint for farm equipment. Two shades of orange are needed. The first shade of orange requires 2 gallons of red paint and 3 gallons of yellow paint. The second shade of orange requires 4 gallons of red paint and 2 gallons of yellow paint. If Steve has 22 gallons of red paint and 17 gallons of yellow paint, how many gallons of each shade of orange paint can be mixed? 11. \_\_\_\_\_  
\_\_\_\_\_

12. Sharon is making aprons and curtains. Information about the construction of the aprons and curtains is given in the table below. Sharon allocated 8 hours for cutting and 27 hours for sewing the items during a particular week. How many of each item can she make? 12. \_\_\_\_\_  
\_\_\_\_\_

Item	Cutting Time	Sewing Time
Apron	0.25 hr	1.5 hr
Curtain	0.5 hr	1.25 hr

13. Ivan makes wooden toy tractors and wooden doll houses. Information about the construction of the items is given in the table below. In a particular week, Ivan allocated 6.2 hours for sanding and 8 hours for painting. How many of each item can he make? 13. \_\_\_\_\_  
\_\_\_\_\_

Toy	Sanding	Painting
Tractor	0.4 hr	0.5 hr
Dollhouse	0.75 hr	1 hr

14. A Southern Illinois farmer has 100 acres to plant corn, soybeans, and wheat. Corn earns \$103 per acre, soybeans earn \$117 per acre, and wheat earns \$96 per acre. His total earnings for the season are \$10,335. If the number of acres of corn is 5 more than 7 times the number of acres of soybeans, how many acres of each crop did he plant? 14. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

15. The parking lot for a tractor show is 11,880 square feet. A car requires 54 square feet to park. A truck requires 108 square feet to park. A bus requires 270 square feet to park. The attendant fills the lot with 154 vehicles and charges \$5 per car, \$7 per truck, and \$10 per bus, for a total of \$890. How many of each type of vehicle parked? 15. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_