21. The sum of two consecutive odd integers is −148. Find the two integers.

22. The sum of three consecutive integers is −57. Find the integers.

23. Three times the smaller of two consecutive even integers is the same as −146 minus 4 times the larger integer. Find the integers.

24. Four times the smaller of two consecutive odd integers is the same as 73 less than 5 times the larger. Find the integers.

25. Two times the sum of three consecutive odd integers is the same as 23 more than 5 times the largest integer. Find the integers.

26. Five times the smallest of three consecutive even integers is 10 more than twice the largest. Find the integers.

Concept 3: Applications Involving Percents and Rates

27. Belle had the choice of taking out a 4-yr car loan at 8.5% simple interest or a 5-yr car loan at 7.75% simple interest. If she borrows $15,000, how much interest would she pay for each loan? Which option will require less interest? **(See Example 3.)**

28. Robert can take out a 3-yr loan at 8% simple interest or a 2-yr loan at $8\frac{1}{2}$% simple interest. If he borrows $7000, how much interest will he pay for each loan? Which option will require less interest?

29. An account executive earns $600 per month plus a 3% commission on sales. The executive's goal is to earn $2400 this month. How much must she sell to achieve this goal?

30. A salesperson earns $50 a day plus 12% commission on sales over $200. If her daily earnings are $76.88, how much money in merchandise did she sell?

31. J. W. is an artist and sells his pottery each year at a local Renaissance Festival. He keeps track of his sales and the 8.05% sales tax he collects by making notations in a ledger. Every evening he checks his records by counting the total money in his cash drawer. After a day of selling pottery, the cash totaled $1293.38. How much is from the sale of merchandise and how much is sales tax?
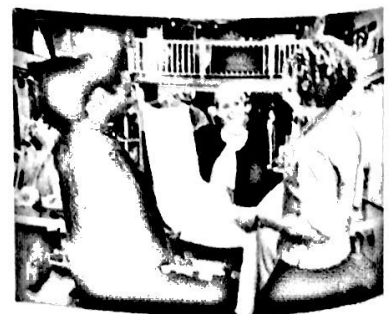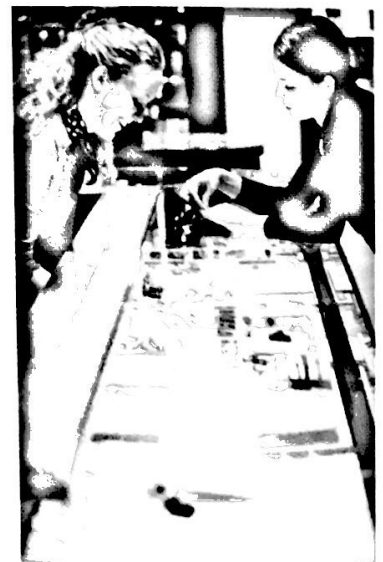
32. Wayne County has a sales tax rate of 7%. How much does Mike's used Honda Civic cost before tax if the total cost of the car *plus tax* is $13,888.60?

33. The price of a swimsuit after a 20% markup is $43.08. What was the price before the markup? **(See Example 4.)**

34. The price of a used textbook after a 35% markdown is $29.25. What was the original price?

35. For a recent year, 1800 medical degrees were awarded to women. This represents a 5.5% increase over the number awarded the previous year. How many women were awarded a medical degree the previous year?

36. For a recent year, Americans spent approximately $69 billion on weddings. This represents a 50% increase from the amount spent in 2001. What amount did Americans spend on weddings in 2001?

Concept 4: Applications Involving Principal and Interest

37. Tony has a total of $12,500 in two accounts. One account pays 2% simple interest per year and the other pays 5% simple interest. If he earned $370 in interest in the first year, how much did he invest in each account? **(See Example 5.)**

38. Lillian had $15,000 invested in two accounts, one paying 9% simple interest and one paying 10% simple interest. How much was invested in each account if the interest after 1 yr is $1432?

39. Jason borrowed $18,000 in two loans. One loan charged 11% simple interest and the other charged 6% simple interest. After 1 yr, Jason paid a total of $1380. Find the amount borrowed in each loan.

40. Amanda borrowed $6000 from two sources: her parents and a credit union. Her parents charged 3% simple interest and the credit union charged 8% simple interest. If after 1 yr, Amanda paid $255 in interest, how much did she borrow from her parents, and how much did she borrow from the credit union?

41. Donna invested money in two accounts: one paying 4% simple interest and the other paying 3% simple interest. She invested $4000 more in the 4% account than in the 3% account. If she received $720 in interest at the end of 1 yr how much did she invest in each account?

42. Mr. Hall had some money in his bank earning 4.5% simple interest. He had $5000 more deposited in a credit union earning 6% simple interest. If his total interest for 1 yr was $1140, how much did he deposit in each account?

43. Ms. Riley deposited some money in an account paying 5% simple interest and twice that amount in an account paying 6% simple interest. If the total interest from the two accounts is $765 for 1 yr, how much was deposited into each account?

44. Sienna put some money in a certificate of deposit earning 4.2% simple interest. She deposited twice that amount in a money market account paying 4% simple interest. After 1 yr her total interest was $488. How much did Sienna deposit in her money market account?

Concept 5: Applications Involving Mixtures

45. Ahmed mixes two plant fertilizers. How much fertilizer with 15% nitrogen should be mixed with 2 oz of fertilizer with 10% nitrogen to produce a fertilizer that is 14% nitrogen? **(See Example 6.)**

46. How much 8% saline solution should Kent mix with 80 cc (cubic centimeters) of an 18% saline solution to produce a 12% saline solution?

47. Jacque has 3 L of a 50% antifreeze mixture. How much 75% mixture should be added to get a mixture that is 60% antifreeze?

48. One fruit punch has 40% fruit juice and another is 70% fruit juice. How much of the 40% punch should be mixed with 10 gal of the 70% punch to create a fruit punch that is 45% fruit juice?

49. How many liters of an 18% alcohol solution must be added to a 10% alcohol solution to get 20 L of a 15% alcohol solution?

50. How many milliliters of a 2.5% bleach solution must be mixed with a 10% bleach solution to produce 600 mL of a 5% bleach solution?

51. Ronald has a 12% solution of the fertilizer Super Grow. How much pure Super Grow should he add to the mixture to get 32 oz of a 17.5% concentration?

52. How many ounces of water must be added to 20 oz of an 8% salt solution to make a 2% salt solution?

53. Two different teas are mixed to make a blend that will be sold at a fair. Black tea sells for $2.20 per pound and green tea sells for $3.00 per pound. How much of each should be used to obtain 4 lb of a blend selling for $2.50?

54. A nut mixture consists of almonds and cashews. Almonds are $4.98 per pound, and cashews are $6.98 per pound. How many pounds of each type of nut should be mixed to produce 16 lb selling for $5.73 per pound?

Concept 6: Applications Involving Distance, Rate, and Time

55. A Piper Cub airplane has an average speed that is 30 mph faster than a Cessna 150 airplane. It takes the Cessna 5 hr to fly from Fort Lauderdale to Atlanta, while it takes the Piper Cub only 4 hr to make the same trip. What is the average speed of each plane? **(See Example 7.)**

56. A woman can hike 1 mph faster down a trail to Archuletta Lake than she can on the return trip uphill. It takes her 3 hr to get to the lake and 6 hr to return. What is her speed hiking down to the lake?

57. Two cars are 192 mi apart and travel toward each other on the same road. They meet in 2 hr. One car travels 4 mph faster than the other. What is the average speed of each car?

58. Two cars are 190 mi apart and travel toward each other along the same road. They meet in 2 hr. One car travels 5 mph slower than the other car. What is the average speed of each car?

59. Two boats traveling the same direction leave a harbor at noon. After 3 hr they are 60 mi apart. If one boat travels twice as fast as the other, find the average rate of each boat.

60. Two canoes travel down a river, starting at 9:00. One canoe travels twice as fast as the other. After 3.5 hr, the canoes are 5.25 mi apart. Find the average rate of each canoe.