

33. The perimeter of a triangle is 155 inches. Side x is 20 inches shorter than side y , and side y is 5 inches longer than side z . Find the lengths of the sides of the triangle.

$$x = 40 \text{ in.}, y = 60 \text{ in.}, z = 55 \text{ in.}$$

34. One angle of a triangle measures 10° more than a second angle, and the third angle is 10° more than six times the measure of the smallest angle. Find the measure of each angle.

$$30^\circ, 20^\circ, 130^\circ$$

35. Vegetable Medley is made of carrots, green beans, and cauliflower. The package says that 1 cup of Vegetable Medley provides 29.4 milligrams of vitamin C and 47.4 milligrams of calcium. One cup of carrots contains 9 milligrams of vitamin C and 48 milligrams of calcium. One cup of green beans contains 15 milligrams of vitamin C and 63 milligrams of calcium. One cup of cauliflower contains 69 milligrams of vitamin C and 26 milligrams of calcium. How much of each vegetable is in 1 cup of Vegetable Medley?

$$0.3 \text{ cup carrots, } 0.4 \text{ cup green beans, } 0.3 \text{ cup cauliflower}$$

36. The Java Shoppe sells a house brand of coffee that is only 2.25% caffeine for \$6.60 per pound. The house brand is a mixture of Colombian coffee that sells for \$6 per pound and is 2% caffeine, French roast that sells for \$7.60 per pound and is 4% caffeine, and Sumatran at \$6.80 per pound and 1% caffeine. How much of each variety is in a pound of house brand?

$$\frac{1}{2} \text{ lb Colombian, } \frac{1}{4} \text{ lb French, } \frac{1}{4} \text{ lb Sumatran}$$

37. The ABC Psychological Testing Service offers three types of reports on test results: score only, evaluation, and narrative report. Each score-only test takes 3 minutes to score using an optical scanner and 1 minute to print the interpretation. Each evaluation takes 3 minutes to score, 4 minutes to analyze, and 2 minutes to print. Each narrative report takes 3 minutes to score, 5 minutes to analyze, and 8 minutes to print. If ABC Services uses its optical scanner 7 hours per day, has 8 hours in which to analyze results, and has 12 hours of printer time available per day, how many of each type of report can it complete each day when it is using all its resources?

40 score only, 20 evaluation, 80 narrative report

38. Reliable Auto Company wants to ship 1700 Status Sedans to three major dealers in Los Angeles, Chicago, and Miami. From past experience, Reliable figures that it will sell twice as many sedans in Los Angeles as in Chicago. It costs \$230 to ship a sedan to Los Angeles, \$70 to Chicago, and \$160 to Miami. If Reliable Auto has \$292,000 to pay for shipping costs, how many sedans should it ship to each city?

800 to Los Angeles, 400 to Chicago, 500 to Miami

39. Ace, Inc. produces three kinds of wooden rackets: tennis rackets, Ping-Pong paddles, and squash rackets. After the pieces are cut, each racket goes through three phases of production: gluing, sanding, and finishing. A tennis racket takes 3 hours to glue, 2 hours to sand, and 3 hours to finish. A Ping-Pong paddle takes 1 hour to glue, 1 hour to sand, and 1 hour to finish. A squash racket takes 2 hours to glue, 2 hours to sand, and $2\frac{1}{2}$ hours to finish. Ace has available 95 labor-hours in its gluing department, 75 labor-hours in sanding, and 100 labor-hours in finishing per day. How many of each racket should it make in order to use all the available labor?

20 tennis, 15 Ping-Pong, 10 squash

40. A farmer has 1300 acres on which to plant wheat, corn, and soybeans. The seed costs \$6 for an acre of wheat, \$4 for an acre of corn, and \$5 for an acre of soybeans. An acre of wheat requires 5 acre-feet of water during the growing season, an acre of corn requires 2 acre-feet, and an acre of soybeans requires 3 acre-feet. If the farmer has \$6150 to spend on seed and can count on 3800 acre-feet of water, how many acres of each crop should she plant in order to use all her resources?

250 acres of wheat, 600 acres of corn, 450 acres of soybeans