

Assignment Sheet #2

1. In a certain ecosystem there are 100 organisms of a given species. Five years later there are 240. During that five-year period, the number of males has doubled and the number of females has tripled. How many males, and how many females, were present originally?
2. A company uses two types of shipping cartons for its two products. One type holds two of product A and three of product B, while the other holds two of product A and one of product B. How many cartons of each type should the company use in order to ship ten of product A and twelve of product B?
3. A candy manufacturer has 130 pounds of chocolate-covered cherries and 170 pounds of mints in stock. He decides to sell these candies in two prepackaged mixtures. One mixture will contain $\frac{1}{2}$ cherries and $\frac{1}{2}$ mints. The other mixture will contain $\frac{1}{3}$ cherries and $\frac{2}{3}$ mints. If the manufacturer wishes to use up all of his present stock, then how many pounds of each mixture can he prepare?
4. A lens manufacturer owns two machines, a grinder and a polisher, which are used in making two types of lenses, glass and plastic. Because of the time needed for daily maintenance, the grinder is only available during 15 hours each day, and the polisher is only available during 10 hours each day. To produce one glass lens, the grinder is needed for one hour and the polisher is needed for one hour. To produce one plastic lens, the grinder is needed for one-half hour and the polisher is needed for one-quarter hour. How many glass lenses, and how many plastic lenses, should the factory plan to produce daily if it wishes to insure that the two machines are in operation for the full time that they are available?
5. A hardware chain makes up small packages of bolts in assorted sizes for sale in its retail stores. One assortment (Assortment A) contains five 1-inch bolts, four 2-inch bolts, and three 3-inch bolts. Another assortment (Assortment B) contains four bolts of each of the three sizes, and a third assortment (Assortment C) contains two 1-inch bolts, six 2-inch bolts, and four 3-inch bolts. One day, after a long packaging run, the package-machine operator finds that he has 500 1-inch bolts, 480 2-inch bolts, and 460 3-inch bolts, left over. He wants to place all of these bolts into packages before quitting time. How many packages of each assortment should he make up in order to use all these leftover bolts?