

1. You are given \$144 in one, five, and ten dollar bills. There are two more ten dollar bills than five dollar bills. How many bills of each type are there?
2. In deciding whether to set up a new manufacturing plant, company analysts have decided that a linear function is a reasonable estimation for the total cost $C(x)$ in dollars to produce x items. They estimate the cost to produce 10,000 items as \$547,500 and the cost to produce 50,000 items as \$737,500.
 - (a) Find a formula for $C(x)$.
 - (b) Find the total cost to produce 100,000 items.
 - (c) Find the marginal cost of the items produced in this plant.
3. Colleen Davis owns a factory that manufactures souvenir key chains. her weekly profit (in hundred of dollars) is given by $P(x) = -2x^2 + 60x - 120$, where x is the number of cases of key chains sold.
 - (a) What is the largest number of cases she can sell and still make a profit?
 - (b) How many cases should she make and sell in order to maximize her profits?
 - (c) What is the maximum profit she could earn?
4. The profit (in millions of dollars) from the sale of x million units of Blue Glue is given by $p.7x - 25.5$. The cost is given by $c = .9x + 25.5$.
 - (a) Find the revenue equation.
 - (b) What is the revenue from selling 10 million units?
 - (c) What is the break even point?