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1. 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?

2. Suppose the supply and demand for a certain textbook are given by

$$\text{supply: } p = \frac{1}{5}q^2$$

$$\text{demand: } p = -\frac{1}{5}q^2 + 40$$

where p is price and q is quantity.

- (a) How many books are demanded at a price of 10? 20? 30? 40?
 - (b) How many books are supplied at a price of 5? 10? 20? 30?
 - (c) Find the equilibrium price and the equilibrium quantity.
3. A knitting shop ordered yarn from three suppliers, I, II, and III. One month the shop ordered a total of 100 units of yarn from these suppliers. The delivery costs were \$80, \$50, and \$65 per unit, respectively, with total delivery costs of \$5990. The shop ordered the same amount from suppliers I and III. how many units were ordered from each supplier?
 4. An electronics company produces transistors, resistors, and computer chips. Each transistor requires 3 units of copper, 1 unit of zinc, and 2 units of glass. Each resistor requires 3, 2, and 1 units of the three materials, and each computer chip requires 2, 1, and 2 units of these materials, respectively. How many of each product can be made with 810 units of copper, 410 units of zinc, and 490 units of glass?
 5. An auto manufacturer sends cars from two plants, I and II, to dealerships A and B located in a midwestern city. Plant I has a total of 28 cars to send, and plant II has 8. Dealer A needs 20 cars, and dealer B needs 16. Transportation costs based on the distance of each dealership from each plant are \$220 from I to A, \$300 from I to B, \$400 from II to A, and \$180 from II to B. The manufacturer wants to limit transportation costs to \$10,640. How many cars should be sent from each plant to each of the two dealerships?
 6. Mc Frugal Snack Shops plan to hire two public relations firms to survey 500 customers by phone, 750 by mail, and 250 by in-person interviews. The Garcia firm has personnel to do 10 phone surveys, 30 mail surveys, and 5 interviews per hour. The Wong firm can handle 20 phone surveys, 10 mail surveys and 10 interviews per hour. For how many hours should each firm be hired to produce the exact number of surveys needed?

7. An animal breeder can buy four types of tiger food. Each case of Brand A contains 25 units of fiber, 30 units of protein and 30 units of fat. Each case of Brand B contains 50 units of fiber, 30 units of protein, and 20 units of fat. Each case of Brand C contains 75 units of fiber, 30 units of protein, and 20 units of fat. Each case of Brand D contains 100 units of fiber, 60 units of protein, and 30 units of fat. How many cases of each brand should the breeder mix together to obtain a food that provides 1200 units of fiber, 600 units of protein, and 400 units of fat?

8. An investment firm recommends that a client invest in AAA, A, and B rated bonds. The average yield on AAA bonds is 6%, on A bonds 7%, and on B bonds 10%. The client wants to invest twice as much in AAA bonds as in B bonds. How much should be invested in each type of bond if the total investment is \$25,000, and the investor wants an annual return of \$1810 on the three investments?