1. A farmer buys chickens and goats. He buys a total of 10 animals for a sum of $1100. If each chicken costs $100 and each goat costs $120, how many chickens and goats did he buy?

2. Three friends A, B, and C decide to pool their money to buy a gift. A contributes twice as much as B, and B contributes half as much as C. If the gift costs $360 in total, how much did each friend contribute?

3. A chemical company produces two types of fertilizers. Each bag of fertilizer A contains 2 units of nitrogen and 3 units of phosphorus, while each bag of fertilizer B contains 4 units of nitrogen and 1 unit of phosphorus. If a customer orders 40 units of nitrogen and 65 units of phosphorus, how many bags of each type of fertilizer should the company prepare?

4. A parking lot charges $3 for the first hour or part thereof and $2 for each additional hour or part thereof. A car parked for a total of 5 hours, while another parked for a total of 8 hours, resulting in a total charge of $39. How much was each charged?

5. A school decided to purchase books for two of its classes, with each book for the first class costing $8 and each book for the second class costing $12. If the school bought a total of 60 books for a total of $600, how many books did each class get?

6. In a fruit market, an apple costs $1, a banana costs $0.50, and an orange costs $0.75. If a customer buys a total of 20 fruits for $14.50, and the number of bananas is twice the number of apples, how many of each fruit did the customer buy?

7. A tailor uses silk and cotton to make two types of shirts. Shirt A requires 1 yard of silk and 2 yards of cotton, while Shirt B requires 2 yards of silk and 1 yard of cotton. If the tailor has 30 yards of silk and 40 yards of cotton, how many of each type of shirt can he make?

8. A restaurant makes two types of pasta dishes. Dish A uses 200 grams of pasta and 100 grams of sauce, while Dish B uses 150 grams of pasta and 150 grams of sauce. If the restaurant has 3 kg of pasta and 2 kg of sauce, how many of each dish can they prepare?

9. A company manufactures two products, A and B. Product A requires 1 hour of machine time and 2 hours of labor, while product B requires 2 hours of machine time and 1 hour of labor. If the total time available is 30 machine hours and 40 labor hours, how many of each product can the company manufacture?

10. A student buys notebooks and pens for school. Each notebook costs $2 and each pen costs $0.5. If the student spends a total of $24 to buy a total of 20 items, how many notebooks and pens did the student buy?

Solutions

1. Let the number of chickens be x and the number of goats be y. The system of equations is:
$$x+y=10,$$
$$100x+120y=1100.$$
Solution: $x=7$ (chickens), $y=3$ (goats).

2. Let the contributions from A, B, and C be a, b, and c respectively. The system of equations is:
$$a=2b,$$
$$b=\frac{1}{2}c,$$
$$a+b+c=360.$$
Solution: $a=\$160$, $b=\$80$, $c=\$120$.

3. Let the number of bags of fertilizers A and B be x and y respectively. The system of equations is:
$$2x+4y=40,$$
$$3x+y=65.$$
Solution: $x=5$ (bags of A), $y=15$ (bags of B).

4. Let the charges for the cars be x and y respectively. The system of equations is:
$$x+y=39,$$
$$3+2(4)+2(y-1)=39.$$
Solution: $x=\$13$, $y=\$26$.

5. Let the number of books for the first and second class be x and y respectively. The system of equations is:
$$x+y=60,$$
$$8x+12y=600.$$
Solution: $x=30$ (first class), $y=30$ (second class).

6. Let the number of apples, bananas, and oranges be a, b, and o respectively. The system of equations is:
$$a+b+o=20,$$
$$1a+0.5b+0.75o=14.50,$$
$$b=2a.$$
Solution: $a=5$ (apples), $b=10$ (bananas), $o=5$ (oranges).

7. Let the number of shirts A and B be x and y respectively. The system of equations is:
$$x+2y=30,$$
$$2x+y=40.$$
Solution: $x=10$ (shirt A), $y=10$ (shirt B).

8. Let the number of dishes A and B be x and y respectively. The system of equations is:
$$200x+150y=3000,$$
$$100x+150y=2000.$$
Solution: $x=10$ (dish A), $y=10$ (dish B).

9. Let the number of products A and B be x and y respectively. The system of equations is:
$$x+2y=30,$$
$$2x+y=40.$$
Solution: $x=20$ (product A), $y=5$ (product B).

10. Let the number of notebooks and pens be n and p respectively. The system of equations is:
$$n+p=20,$$
$$2n+0.5p=24.$$
Solution: $n=10$ (notebooks), $p=10$ (pens).