

SYSTEMS OF LINEAR EQUATIONS: WORD PROBLEMS

Write a system of equations for each problem. Then solve the system of equations using any method. If you choose to solve the system of equations by graphing, you will need a sheet of graph paper to show your work. **Equations may vary.**



- 1** Julien is buying donuts to bring to his aunt's house for breakfast. He wants to buy one donut for each of the 9 people attending, which includes himself. He buys some blueberry cake donuts, which cost \$3 each, and some chocolate glazed donuts, which cost \$2 each. If Julien spends \$20 before tax, how many of each type of donut did he buy?

$$b + c = 9$$
$$3b + 2c = 20$$

He bought 2 blueberry cake donuts and 7 chocolate glazed donuts.

- 2** Leila wants to sell her homemade candles at the Linwood Street Craft Fair. She decides to sell her candles for \$12 apiece. The materials for one candle cost Leila \$2. If she also pays \$40 to rent the booth for the day, how many candles must Leila sell to cover all of her expenses? How much will her sales and expenses be at that point?

$$12c = e$$
$$2c + 40 = e$$

She must sell 4 candles. At that point, her sales and expenses will be \$48.

- 3** The drama club at Hawthorne Middle School is selling tickets to their spring musical. Student tickets cost \$10 and adult tickets cost \$15. Last week, they sold 120 tickets for the Sunday matinee show. If those ticket sales totaled to \$1,400, how many adult tickets were sold? How many student tickets were sold?

$$10s + 15a = 1,400$$
$$s + a = 120$$

80 student tickets and 40 adult tickets were sold.

- 4** An artist sells his paintings at a gallery. He charges a set price for each small painting and each large painting he sells. Last month, the artist sold 6 small paintings and 8 large paintings and earned \$670 in all. This month, he sold 12 small paintings and 10 large paintings and earned \$950 in all. How much does the artist charge for a small painting? How much does he charge for a large painting?

$$6s + 8\ell = 670$$
$$12s + 10\ell = 950$$

He charges \$25 for a small painting and \$65 for a large painting.