

SYSTEMS OF LINEAR EQUATIONS WORD PROBLEMS: ELIMINATION

For each problem below, write a system of equations, solve using elimination, and write your final answer as a complete sentence. **Equations may vary.**

- 1 Mia's family and Leo's family are going to see a new superhero movie together. Mia's family bought 1 adult ticket and 3 child tickets for a total of \$44. Leo's family bought 2 adult tickets and 3 child tickets for a total of \$58. How much does an adult ticket cost?

$$a + 3c = 44$$

$$2a + 3c = 58$$

An adult ticket costs \$14.

- 2 Carlos is a pet groomer. His appointments are a set length of time based on the animal. Last week, Carlos groomed 7 dogs and 5 cats for a total of 31 hours of work. The week before, he groomed 4 dogs and 5 cats for a total of 22 hours of work. How long are the dog-grooming appointments?

$$7d + 5c = 31$$

$$4d + 5c = 22$$

The dog-grooming appointments are 3 hours long.

- 3 Lola's Lemonade sells frozen lemonade in two sizes: large and small. On Monday, Lola sold 25 small and 15 large frozen lemonades for a total of \$95 in sales. On Tuesday, Lola sold 16 small and 15 large frozen lemonades for a total of \$77 in sales. How much does Lola charge for a small frozen lemonade?

$$25s + 15\ell = 95$$

$$16s + 15\ell = 77$$

Lola charges \$2 for a small frozen lemonade.

- 4 Sidney works at a party supply store. Yesterday, she spent the day arranging 160 balloons into 22 balloon bouquets. She put 4 balloons in each small bouquet and 10 balloons in each large bouquet. How many small bouquets did Sidney arrange?

$$s + \ell = 22$$

$$4s + 10\ell = 160$$

Sidney arranged 10 small bouquets.

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For each problem below, write a system of equations, solve using elimination, and write your final answer as a complete sentence. **Equations may vary.**

- 5 Darius and Simone each bought 20 tickets at the fair. Darius played 2 games and went on 6 rides, while Simone played 8 games and went on 4 rides. They each used all of their tickets. If it costs the same amount of tickets to play each game and it costs the same amount of tickets to go on each ride, how many tickets does it cost to go on a ride? How many tickets does it cost to play a game?

$$2g + 6r = 20$$

$$8g + 4r = 20$$

It costs 3 tickets to go on a ride and 1 ticket to play a game.

- 6 The Hill Street Diner runs a special on meatloaf sandwiches every weekend. On Saturday, the diner sold 36 half meatloaf sandwiches and 18 whole meatloaf sandwiches for a total of \$252 in sales. On Sunday, the diner sold 18 half meatloaf sandwiches and 40 whole meatloaf sandwiches for a total of \$312 in sales. During the weekends, how much does the diner charge for a half meatloaf sandwich? How much does the diner charge for a whole meatloaf sandwich?

$$36h + 18w = 252$$

$$18h + 40w = 312$$

During the weekends, the diner charges \$4 for a half meatloaf sandwich and \$6 for a whole meatloaf sandwich.

- 7 Catalina is playing a video game where she collects hidden treasure to earn points. In the first round, she collects 8 gold coins and 2 treasure chests, earning a total of 16 points. In the second round, she collects 10 gold coins and 3 treasure chests, earning a total of 22 points. How many points is a treasure chest worth? How many points is a gold coin worth?

$$8g + 2t = 16$$

$$10g + 3t = 22$$

A treasure chest is worth 4 points, and a gold coin is worth 1 point.

- 8 Last summer, Felix swam on a swim team and played on a baseball team. Each team had practices of a set length of time. The first week of the summer, Felix had 4 swim practices and 3 baseball practices for a total of 18 hours of practice. The next week, he had 3 swim practices and 4 baseball practices for a total of 17 hours of practice. How long was each swim practice? How long was each baseball practice?

$$4s + 3b = 18$$

$$3s + 4b = 17$$

Each swim practice was 3 hours long, and each baseball practice was 2 hours long.