

Problem Solving

Directions: Solve each problem. Show your work in the space provided.

- 1.) Sarah is planning to buy a new laptop. She found two options: Option A costs \$800 with a 15% discount, and Option B costs \$900 with a 10% discount. Which option offers a better deal after the discount?

- 2.) Alex is planning a road trip. He needs to drive 400 miles, and his car's fuel efficiency is 30 miles per gallon (mpg). If the gas price is \$3.50 per gallon, how much money should he budget for gas?

- 3.) Emily is planning a party for her birthday. She wants to buy balloons and streamers. Balloons cost \$1 each, and streamers cost \$3 per pack. She wants to spend no more than \$20 and buy at least 10 items in total. How many of each item should she buy to meet her budget and quantity requirements?

- 4.) Jason earns \$12 per hour at his part-time job. He works 5 hours each week. He wants to save \$200 for a new video game. After paying for his expenses, he can save \$50 each week. How many weeks will it take him to save enough money for the video game?

- 5.) Emily wants to plant a rectangular garden in her backyard. She has 60 feet of fencing material to enclose three sides, with the fourth side being a wall. If she wants to maximize the area of the garden, what should the dimensions of the garden be?

- 6.) Sarah is considering two savings account options. Account A offers a simple interest rate of 4% per year, while Account B offers compound interest at 3.5% per year. If Sarah plans to deposit \$1000 for 5 years, which account would yield more money at the end of the 5 years?

- 7.) In a basketball tournament with 8 teams, the teams are seeded based on their records. The top 4 teams get a bye in the first round. If the teams are seeded randomly, what is the probability that the two best teams will meet in the final round?

- 8.) A city plans to reduce water usage by encouraging residents to install low-flow showerheads. If a family of four switches from a regular showerhead (flow rate of 2.5 gallons per minute) to a low-flow showerhead (flow rate of 1.5 gallons per minute) and each person takes a 10-minute shower once a day, how much water could the family save in a year?

