

Problem Solving

ANSWER KEY

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? **Option A is a better deal at \$680 than Option B at \$810**

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? **\$46.67**

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? **5 balloons and 5 packs of streamers**

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?
2 weeks

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?
15 feet(width) and 30 feet (length)

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?
Account A

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?

$$\frac{1}{4}$$

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?

58,400 gallons

