

Lesson 4 Multi-Step Problem Solving

Multi-Step Example

Rico conducts a simulation. He spun a spinner 16 times. The letter D showed up five times, and each resulted in a win for Rico. Natasha won all the other games. Based on the simulation, what percent more did Natasha win compared to Rico winning? Write your answer as a percent. **7.SP.8, MP 1**

Use a problem-solving model to solve this problem.

1 Understand

Read the problem. Circle the information you know. Underline what the problem is asking you to find.

2 Plan

What will you need to do to solve the problem? Write your plan in steps.

Step 1 Determine the _____.

Step 2 Determine the _____ for Rico and Natasha. Then _____.

Read to Succeed!



Use a list or tree diagram to help determine the total number of outcomes for the simulation.

3 Solve

Use your plan to solve the problem. Show your steps.

There are a total of _____ outcomes.

Determine the probabilities and then subtract.

$$P(\text{Rico won}) = \frac{\quad}{\quad} \quad P(\text{Natasha won}) = \frac{\quad}{\quad}$$

$$\frac{\quad}{\quad} - \frac{\quad}{\quad} = \frac{\quad}{\quad} \text{ which is equal to } \frac{\quad}{\quad}$$

Natasha won _____ more than Rico.

4 Check

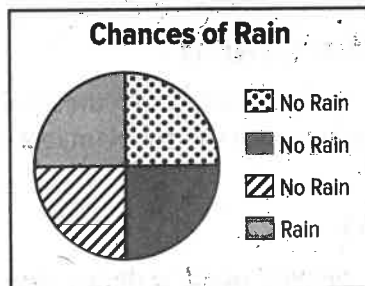
How do you know your solution is accurate?

Lesson 4 *(continued)*

Use a problem-solving model to solve each problem.

1 Marlene conducts a simulation. She rolled a number cube, twice. The sum of 8 or greater showed up 21 times, each resulted in a win for her. Ashton won all the other games. Based on the simulation, what percent more did Marlene win compared to Ashton winning? Write your answer as a percent rounded to the nearest tenth. **7.SP.8, MP 1**

2 There is a 25% chance of rain every day this week. Sandra set up a spinner to simulate the probability of rain. She spun the spinner below 7 times and her experimental probability was $\frac{2}{7}$. How much greater was the experimental probability compared to the theoretical probability? **7.SP.8, MP 2**



3 Rebecca received a \$50 check from her grandmother for her birthday. She used the money to buy some new clothes. If she spent \$49.75, how many ways could she receive change if no pennies are used? **7.SP.8, MP 4**

4 **H.O.T. Problem** Juan is playing basketball. During a game, he is fouled 8 times. Each time, he goes to the free-throw line to shoot two shots. A simulation was conducted to determine the experimental probability of making a free-throw shot. Compare the experimental probability, $\frac{3}{8}$, to the theoretical probability, 50%. **7.SP.8, MP 2**

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