FOUR-STEP PLAN USED IN SOLVING EXPERIMENTAL AND THEORETICAL PROBABILITY

THE FOUR-STEP PLAN CAN BE USED IN SOLVING THE PROBLEMS:

Step 1. Understand
Step 2. Plan
Step 3. Solve
Step 4. Check

LET'S SOLVE THE FIRST PROBLEM.

Problem 1:
A bag contains 10 red marbles, 6 blue marbles, and 8 yellow marbles. Find the theoretical probability of getting a blue m

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STEP 1: UNDERSTAND

a. What is asked?

- The theoretical probability of getting a blue marble.

b. What are the given facts?

- Bag contains 10 red balls, 6 blue marbles, 8 yellow marbles, or a total of 24 marbles.

A bag contains 10 red marbles, 6 blue marbles, and 8 yellow marbles. Find the theoretical probability of getting a blue m

STEP 2: PLAN

a. What operation is to be used to solve the problem?

- Addition and division.

b. What formula and equation are to be used to solve the problem?

- In finding the theoretical probability, use this formula:

$$\text{Theoretical Probability (event)} = \frac{\text{number of favorable outcomes}}{\text{number of possible outcomes}}$$

The equation to be used to solve the problem is:

$$\text{TP (blue)} = \frac{6}{24}$$

A bag contains 10 red marbles, 6 blue marbles, and 8 yellow marbles. Find the theoretical probability of getting a blue m

STEP 3: SOLVE

a. Show the computation.

To find the theoretical probability

$$\text{Theoretical Probability (Blue Marble)} = \frac{number\ of\ favorable\ outcomes}{number\ of\ possible\ outcomes}$$

$$\textbf{TP(Blue Marble)} = \frac{6}{24}$$

Simplifying the fraction, $\frac{6}{24}$, by dividing both the numerator and denominator by 6 will result to $\frac{1}{4}$.

$$\textbf{TP(blue marble)} = \frac{6}{24} \div \frac{6}{6} = \frac{1}{4} \text{ or } 0.25\%$$

Therefore, the theoretical probability of getting a **blue marble is $\frac{1}{4}$ or 0.25 %**

A bag contains 10 red marbles, 6 blue marbles, and 8 yellow marbles. Find the theoretical probability of getting a blue m

CHECK

a. Check your answer.
This is one way to check if the answer is correct. Go back to your computation. Check if all the given values are properly substituted into the formula. Check also the flow of your computation.

NOW, LET'S SOLVE THE SECOND PROBLEM.

Problem 2:
A basketball player attempts 50 free throws. He successfully makes the shot 35 times. What is the experimental probability of his making a free throw?

A basketball player attempts 50 free throws. He successfully makes the shot 35 times. What is the experimental probability of his making a free throw?

STEP 1: UNDERSTAND

a. What is asked?

- The experimental probability of a basketball player free throw.

b. What are the given facts?

- 50 attempts at free throws, shot 35 times.

A basketball player attempts 50 free throws. He successfully makes the shot 35 times. What is the experimental probability of his making a free throw?

STEP 2: PLAN

a. What operation is to be used to solve the problem?

- Subtraction and Division.

b. What formula and equation are to be used to solve the problem?

- Let N = the number of times a basketball player shoots.

- Let N = the number of times a basketball player shoots.

N = Total number of attempts – the number of times shoots

50 attempts - 35 shots = N

- In finding the experimental probability, use this formula:

$$\textbf{Experimental Probability (event)} = \frac{\textit{number of times favorable outcomes occur}}{\textit{number of trials in the experiment}}$$

$$\textbf{EP (Head)} = \frac{\textbf{N}}{\textbf{50}}$$

A basketball player attempts 50 free throws. He successfully makes the shot 35 times. What is the experimental probability of his making a free throw?

STEP 3: SOLVE

a. Show the computation.

To solve the number of times making a free throw(N), do this.

50 times – 35 times = 15 times

Therefore, **15 times he's free throw.**

To solve the experimental probability of his making a free throw.

$$\textbf{Experimental Probability (event)} = \frac{number\ of\ times\ favorable\ outcomes\ occur}{number\ of\ trials\ in\ the\ experiment}$$

$$\text{EP (Head)} = \frac{15}{50}$$

$$\text{EP (Head)} = \frac{15 \div 5}{50 \div 5} = \frac{3}{10} \text{ or } 30\%$$

Therefore, the experimental probability of his making a **free throw is** $\frac{3}{10}$ **or 30%.**

A basketball player attempts 50 free throws. He successfully makes the shot 35 times. What is the experimental probability of his making a free throw?

CHECK

a. Check your answer.
This is one way to check if the answer is correct. Go back to your computation. Check if all the given values are properly substituted into the formula. Check also the flow of your computation.