

A Plan for Problem Solving (Pages 24–29)

You can use a four-step plan to solve problems.

1. Explore	Read the problem carefully. Identify the information that is given. Determine what you need to find.	Problem-Solving Strategies Look for a pattern. Draw a diagram. Make a table. Work backward. Use an equation or formula. Make a graph. Guess and check.
2. Plan	Select a strategy for solving the problem. If possible, estimate the answer.	
3. Solve	Use your strategy to solve the problem.	
4. Examine	Check your answer to see if it makes sense and is reasonably close to your estimate.	

EXAMPLE

Juan has 3 more books than Maria, and together they have 15 books. How many books does Maria have?

Explore There are 15 books altogether and Juan has 3 more than Maria. How many does Maria have?

Plan Use an equation. Let m = the number of books Maria has. Then Juan has $m + 3$ books.

Solve

$$\begin{aligned} m + (m + 3) &= 15 \\ 2m + 3 &= 15 \\ 2m &= 12 \\ m &= 6 \end{aligned}$$

Maria has 6 books.

Examine If Maria has 6 books, Juan has $6 + 3$ or 9 books. $6 + 9 = 15$. The solution checks.

PRACTICE

Solve each problem. Use any strategy.

- Derek drove 5 hours longer than Erin on a trip. Together they drove 21 hours. How long did each of them drive?
- Conrad deposited \$650 into an account that pays an annual interest rate of 4%. How much money will Conrad have in his account after 3 years? (*Hint: Use the formula $I = prt$.*)
- A vending machine takes quarters, nickels, and dimes. How many possible ways can Deidre use coins to purchase a drink for 60 cents?
- A Kodiak bear begins having 3 cubs every 3 years starting at age 6. If the average lifespan of a Kodiak bear is 29 years, how many cubs does a mother bear average in a lifetime?



- 5. Standardized Test Practice** What is the width of a rectangular field that has a perimeter of 4000 feet if the length of the field is 200 feet greater than the width?

A 1800 ft

B 1100 ft

C 900 ft

D 800 ft

Answers: 1. Erin drove 8 hours and Derek drove 13 2. \$728 3. 13 4. 24 cubs 5. C