

A Plan for Problem Solving (Pages 24–29)

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

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| 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