

Plan for Problem Solving

Using a four-step problem-solving plan can help you solve any word problem.

- 1) Understand the problem.
 - Identify what info is given.
 - Identify what I need to find.
- 2) Plan the solution.
 - Define a variable
- 3) Solve the problem.
- 4) Check the solution.
 - Does my answer make sense?
 - Does my labelling fit the problem?

Example 1: Ling's hallway is 10ft long and 4ft wide. He paid \$200 to tile his hallway floor. How much did Ling pay per square foot for the tile?

1) Understand

- He paid \$200 to tile the hall.
- The hall is 10ft x 4ft
- We know the area: $10 \times 4 = 40 \text{ sq. ft}$

• We don't know how much Ling paid per sq. ft.

2) Plan

- Let $x = \text{cost per sq. ft.}$

3) Solve

$$\frac{200}{40} = \frac{40x}{40}$$

$$x = \$5 \text{ per sq. ft.}$$

Another way: $x = \frac{200}{40}$

4) Check

- Units match
- Plug back in and verify

Example 2: Emily's family drove 254.6 miles. Their car used 19 gallons of gasoline. What is the car's gas mileage?

1) Understand

- Drove 254.6 miles
- Used 19 gallons of gas
- We don't know the gas mileage

2) Plan

Let m = car's gas mileage

3) Solve

$$\frac{254.6}{19} = \frac{19m}{19}$$

$$m = 13.4 \text{ miles per gallon}$$

4) Check

- Units match
- Plug back in to verify.