

TOPIC: INTRO TO PROBLEM SOLVING

Word Problem Solving Strategy

◆ Word problems could be tricky, but we can use these steps to break them down.

EXAMPLE

A rectangular field's length is four times its width. If the perimeter of the field is 500 yards, what are the field's dimensions?

1) Understand the problem:

- Read & *reread* the problem,
- Draw a picture if needed,
- Identify & name the _____.

2) Build equation(s) that models the problem.

4) State the answer in the context of the problem.

3) Solve the equation.

5) Check your solution (both to the *equation* and in the _____ of the problem).

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PRACTICE

Find each unknown number.

(A) One number is nine less than another. Their sum is negative twenty-seven.

(B) If half of a number is added to $\frac{2}{5}$, the result is the same as subtracting $\frac{1}{10}$ from the number.

HOW TO: Solve Word Problems

- 1) **Understand** the problem
 - Read & *reread* the problem
 - Draw a picture if needed
 - Identify & name the unknown
- 2) **Build** an equation that models the problem
- 3) **Solve** equation
- 4) Write the sentence as a **full sentence**
- 5) **Check** your solution (both to the equation and in the context of the problem)

PRACTICE

Patricia has 30 meters of fencing to make a rectangular garden in her backyard. She wants the length to be 5 meters more than the width. Complete steps 1 & 2 of the word problem solving process to set up an equation Patricia could use to find the width of her rectangular fence.

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PRACTICE

Jordan is designing a picture frame for a poster. The perimeter of the frame is 80 cm. The length is 12 cm longer than its width. Identify the dimensions of this poster.

EXAMPLE

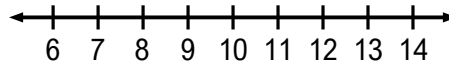
A triangle-shaped garden is designed such that two sides of the triangle are 8 and 12 meters long, and the angle between these sides is 30° less than twice the measure of another angle in the triangle, x . The third angle is 20° more than x . Solve for the angles of the triangle.

Hint: The sum of all angles inside a triangle is equal to 180° .

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Consecutive Integer Problems

◆ **Consecutive Integers** are _____ numbers that follow each other in order.



EXAMPLE

(A) A book is open to two pages whose page numbers sum to 23. What is the number on each page?

Recall

Problem Solving Steps

- 1) Understand problem
- 2) Build equation
- 3) Solve equation
- 4) State answer
- 5) Check solution

(B) Two consecutive even integers sum to 286. What is the value of each integer?

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PRACTICE

Find the integers.

(*A*) The sum of two consecutive odd integers is 176.

(*B*) The sum of three consecutive even integers is 72.

EXAMPLE

The difference between the first integer and the sum of the other two integers is -21 . These three numbers are consecutive odd integers.

EXAMPLE

The six sides of an irregular hexagon are represented by consecutive integers. Find the lengths of the sides if its perimeter is 75 cm.