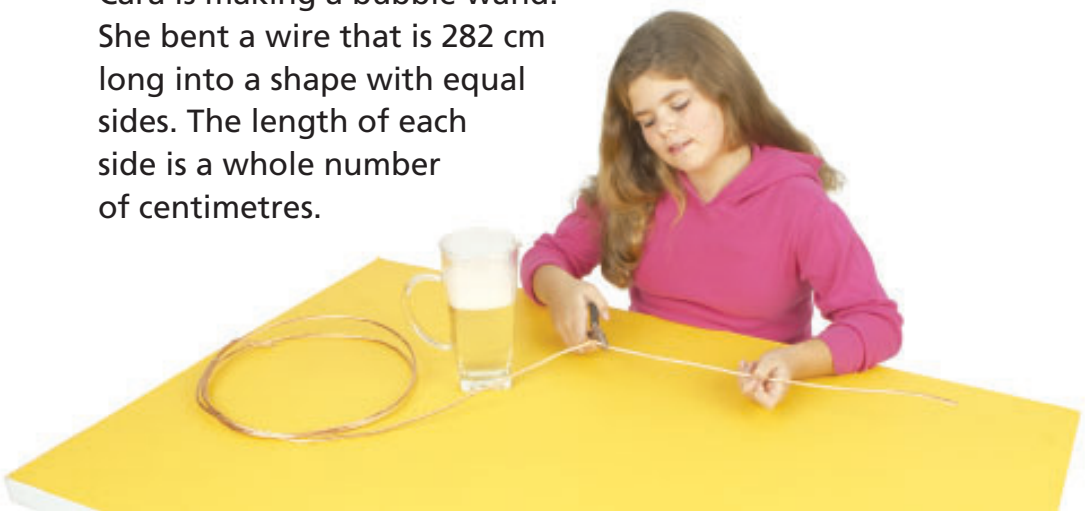
Chapter 9
Lesson 10

Solving Problems by Guessing and Testing

GOAL

Guess and test to solve division problems.

Cara is making a bubble wand. She bent a wire that is 282 cm long into a shape with equal sides. The length of each side is a whole number of centimetres.



How long is each side of Cara's shape?

Mateo's Solution

I started by guessing that there were 8 sides.
The side lengths would be $282 \div 8 = 35$ R2. But the side length is a whole number.
I decided to try fewer sides.

My second guess was 6 sides.
The side lengths would be $282 \div 6 = 47$.
The shape has 6 sides, and each side is 47 cm long.

Reflecting

A. Could the shape have been a pentagon? Explain your thinking.

B. Was guessing and testing a good strategy to use for this problem? Why?

Checking

1. A store received 120 new MP3 players in boxes. All the boxes held the same number of MP3 players. There were fewer than 10 boxes.

a) How do you know there could have been 6 boxes?

b) Is there another possible answer? Explain.

Practising

2. All the classes in Ash's school raised the same amount of money for a charity. Together, they raised $486.

a) How many classes are in Ash's school? List three possibilities.

b) For each possibility, how much money did each class raise?

3. The same digit is missing from each box. What is the digit?

$$\begin{array}{r} 12\square \\ \square\overline{)\square 96} \end{array}$$

$\square\square\square \div \square = \square\square$

divisor quotient

4. A three-digit number was divided by a one-digit number. The quotient and the divisor are 91 apart. What are the 2 numbers?

5. A three-digit number was divided by a one-digit number. The remainder was 0.5. What were the 2 numbers? List 3 possibilities.

$\square\square\square \div \square = \square\square\square$ R 0.5

6. Create a problem that you could solve by guessing and testing. Solve your problem.