## Problem Solving: Real-World Problems Finding the Perimeter

Logan is part of his school's robotic club. They've been preparing for Robot Soccer all year! Logan has programmed his robot to play soccer. It can kick, run, and score goals!

Before the robots play a game of soccer, they need to measure a few playing fields. Let's help them!

This field is a rectangle. If the perimeter of this field is 24 feet and the width is 8 feet, what is the length?

Let's label what we know on the field. The perimeter is 24 feet, and the width is 8 feet. Since the field is a rectangle, *both* widths are 8 feet. Let's find the length now!

Here's our equation: 8 plus 8 plus something plus something equals 24. Add the 8s together. 16 plus 2 somethings equals 24. Do you remember what to do next? That's right! Subtract 16 from both sides. We're still left with a 2 here. We can get the question mark alone by dividing by 2 on both sides. Perfect! Now what is 8 divided by 2? Oh yes, 4!

Let's check our answer. 8 plus 8 plus 4 plus 4 equals 24. We were right! The length of this rectangle is 4 feet.

This playing field is a perfect square. If the width of this field is 120 inches, what is the perimeter?

Before we write an equation, let's look at what we know. A square is a shape with 4 sides, all the exact same length. That means each side is 120 inches. 120 plus 120 plus 120 plus 120 equals 480. The perimeter is 480 inches!

This is the last playing field to measure before Robot Soccer! This field is challenging because it's not a square or a rectangle. In fact, it has 5 sides! One of the sides is 182 centimeters, one side is 161 centimeters, one side is 283 centimeters, and one side is 60 centimeters. If the perimeter of this field is 840 centimeters, what is the missing length?

Let's see, what do we know? Ah yes! This side looks like the longest, so let's label it with 283 centimeters. This side just a little shorter, so we'll put 182 there. 161 can go here, and 60 can go here.

Our equation will have lengths on one side and the perimeter on the other side. There we go! The missing length is 154 centimeters!

Thanks for helping Logan get the fields measured and ready for Robot Soccer. He can't wait to see who wins!