

Example: Ratios of Side Lengths in a Quadrilateral**Problem:**

The ratio of the sides of a quadrilateral is 2 to 3 to 3 to 5. The perimeter is 65 feet. Find the length of each side.

Solution:

Using the ratios of 2 to 3 to 3 to 5, we can write that side 1 is $2x$, side 2 is $3x$, side 3 is $3x$ and side 4 is $5x$.

We are told that the perimeter is 65 feet, so we can write the equation $2x + 3x + 3x + 5x = 65$.

Simplifying and solving this, we get $13x = 65$, which means $x = 5$.

Now we can use the value of x to calculate the actual length of each side.

Side 1 is $2x$, which equals 2 times 5 which equals 10 feet.

Side 2 is $3x$, which equals 3 times 5 which equals 15 feet.

Side 3 is $3x$, which equals 3 times 5 which equals 15 feet.

And Side 4 is $5x$, which equals 5 times 5 which equals 25 feet.

It is always a good idea to check your answer. In this case, using the side lengths that we calculated, we find the perimeter equal to $10 + 15 + 15 + 25 = 65$ feet. This matches the perimeter that the problems gave us.