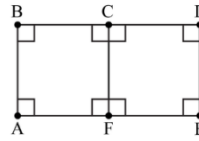


## My Problem-Solving Steps with Reasoning

**Sample Problem/Scenario/Investigation** (Source: ERB middle school practice test)

I labeled each side 5 cm



In the figure shown,  $ABCF$  and  $FCDE$  are squares with sides of length 5 cm, and  $ABDE$  is a rectangle. What is the ratio of the perimeter of the rectangle to the sum of the perimeters of the two squares?

<b>My Solution Path</b> List each step or investigation procedure (create representation, use calculations, materials, equipment, etc.).	<b>My Thinking and Reasoning</b> Explain <b>why</b> this step makes sense in finding a final solution.	<b>My Connections</b> Identify the concept, rule, principle, process, formula, or model applied OR extend your thinking.
<b>STEP 1: Read the problem and describe the challenge – what is it you need to do?</b>	I have to compare the perimeters of two squares with perimeter of one rectangle.	Perimeter - square, rectangle Ratios Proportional reasoning
<b>STEP 2: Show your work for each step.</b>	<b>Explain reasoning for each step</b>	<b>Make mathematical connections or extensions</b>
I labeled all side lengths of $ABCF$ and $FCDE$ with <span style="border: 1px solid black; padding: 2px;">5</span>	This helps me find perimeters of each square and the larger rectangle.	A square has equal side lengths.
Perimeter of square $ABCF$ $5 + 5 + 5 + 5 = 20$ cm Perimeter of square $FCDE$ $5 + 5 + 5 + 5 = 20$ cm Both squares $20 + 20 = 40$ cm  Perimeter of rectangle $ABDE$ $5 + 10 + 5 + 10 = 30$ cm	I had to find and add the perimeters of the 2 squares ( $20 + 20 = 40$ ) before I could compare them with the perimeter of the rectangle (30)	Rule - Add side lengths to find the perimeter of a quadrilateral
30:40	This means perimeter of rectangle (30) is compared to the perimeter of two squares (40)	I wrote the comparison as a ratio.
3:4	$30/40 = \frac{3}{4}$ I divided each by 10	Ratios are like fractions that can be simplified. I used proportional reasoning

## My Problem-Solving Steps with Reasoning

### The Problem/Scenario/Investigation

<b>My Solution Path</b> List each step or investigation procedure (create representation, use calculations, materials, equipment, etc.).	<b>My Thinking and Reasoning</b> Explain <b>why</b> this step makes sense in finding a final solution.	<b>My Connections</b> Identify the concept, rule, principle, process, formula, or model applied OR extend your thinking.
<b>STEP 1: Read the problem and describe the challenge – what is it you need to do?</b>		
<b>STEP 2: Show your work for each step.</b>	<b>Explain reasoning for each step</b>	<b>Make mathematical connections or extensions</b>