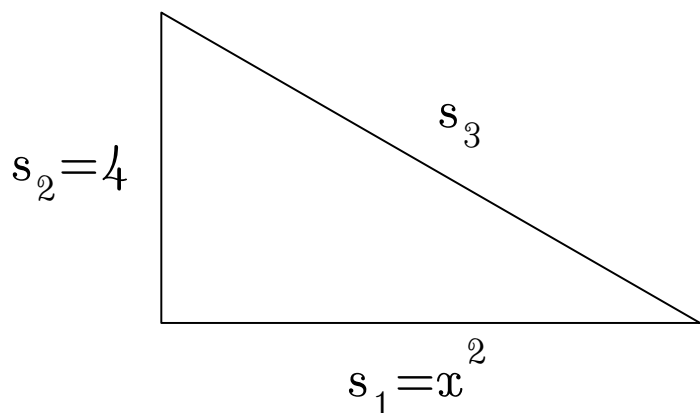


If the perimeter of the figure can be represented by the polynomial $x^2 + 2x + 4$ find a polynomial that represents the length of the missing side.



1) The perimeter is the sum of the three sides.

$$P = s_1 + s_2 + s_3$$

2) Here, the perimeter is known and so are two sides.

Replace as shown below.

$$\begin{array}{c}
 P = s_1 + s_2 + s_3 \\
 \underbrace{\quad \quad \quad}_{x^2 + 2x + 4} = \underbrace{s_1}_{x^2} + \underbrace{s_2}_{4} + s_3
 \end{array}$$

3) Now you can solve for s_3 by subtracting x^2 and 4.

$$x^2 + 2x + 4 - x^2 - 4 = s_3$$

$$2x = s_3$$

move x^2 and 4 to the left with subtraction

simplify on the left: $x^2 - x^2 = 0$ and $4 - 4 = 0$

so only $2x$ is left on the left. This is s_3 .