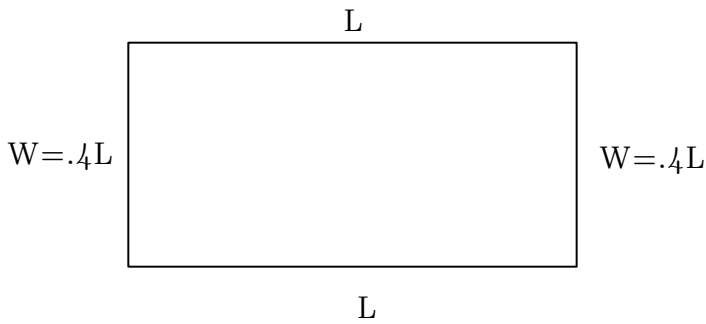


Find the width and length of a rectangle given that it is 40% of the length. The perimeter is 42 meters.

- 1) Draw a picture, and label the sides clearly. Because  $W$  is 40% of  $L$ , you can label the vertical sides as shown. This expression indicates you're taking 40% of  $L$ . In decimal form, this is  $.4 \times L$ .



- 2) Now add the sides together to form the expression for the perimeter.

$$L + .4L + L + .4L$$

write the sum

$$1L + .4L + 1L + .4L$$

sometimes it's helpful to show the 1 in front of each  $L$

$$2.8L$$

add the coefficients and copy the  $L$

- 3) Lastly, you're told the perimeter is 42, so set the expression from step 2) above equal to 42.

$$2.8L = 42$$

$$\frac{2.8}{2.8}L = \frac{42}{2.8}$$

divide both sides by 2.8

$$1L = 15$$

remember that  $\frac{2.8}{2.8} = 1$ , so there is a 1 in front of the  $L$  now

$$L = 15$$

it's convention to not write the 1 explicitly in most cases

- 4) Now that you know the length, you can find the width by taking 40% of 15.

$$W = .4(15) = 6$$

- 5) Summarize your results by stating that the length is 15, and the width is 6.