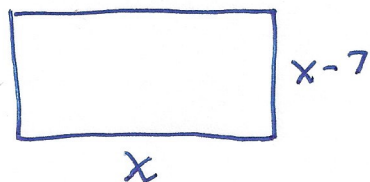


31. The perimeter of a rectangle is 82 inches. The width is 7 inches shorter than the length. What are the length and width of the rectangle?



L	W	P
x	x-7	82
$2L + 2W = P$		

Legend: Let $x = \text{Length}$
 $x - 7 = \text{Width}$

Formula: $2L + 2W = P$

Equation: $2(x) + 2(x-7) = 82$

$$2x + 2x - 14 = 82$$

$$4x - 14 = 82$$

$$\underline{+ 14 = +14}$$

$$4x = 96$$

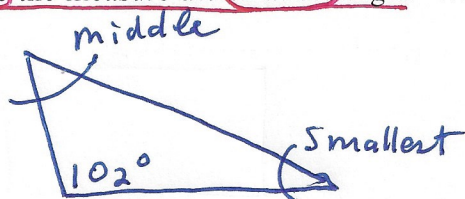
$$\frac{4x}{4} = \frac{96}{4}$$

$$x = 24 \text{ (Length)}$$

$$\begin{aligned} \text{width is } x-7 \\ &= 24-7 \\ &= 17 \end{aligned}$$

Sentence: The length is 24 inches and the width is 17 inches.

32. In a triangle, the measure of the largest angle is 102° . The measure of the middle angle is 6° more than twice the measure the smallest angle. What are the measures of the middle and smallest angles?



Small	Medium	Large	Total
x	$2x+6$	102	180
$S + m + L = 180$			

Legend: Let $x =$ smallest angle measure
 $2x + 6 =$ middle angle measure

Formula: $S + m + L = 180$

Equation: $x + (2x + 6) + 102 = 180$

$$x + 2x + 6 + 102 = 180$$

$$3x + 108 = 180$$

$$\underline{- 108} = -108$$

$$3x = 72$$

$$\frac{3x}{3} = \frac{72}{3}$$

$$\begin{array}{r} 24 \\ 3 \overline{) 72} \\ \underline{-6} \\ 12 \\ \underline{-12} \\ 0 \end{array}$$

$$x = 24 \text{ (smallest)}$$

$$\begin{aligned} \text{middle} &: 2(24) + 6 \\ &= 48 + 6 \\ &= 54 \end{aligned}$$

Sentence: the smallest angle is 24° , and
the middle angle is 54° .