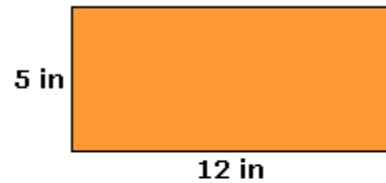


AREA

Area of Squares and Rectangles
AREA= Length x width (DO NOT ADD)

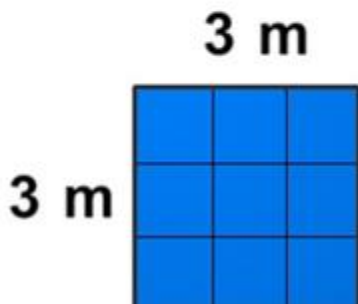
Find the area of the rectangle below.



Solution:

To find the area of the rectangle, use the formula below.

$$\begin{aligned}\text{Area} &= \text{length} \times \text{width} \\ &= 5 \text{ in} \times 12 \text{ in} \\ &= 60 \text{ in}^2\end{aligned}$$



Area is measured in square units!

1) Count the squares

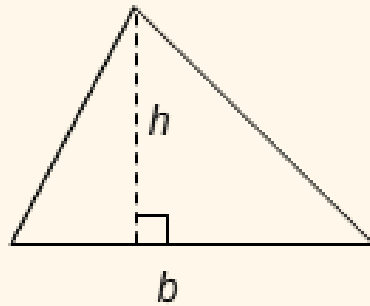
$$9 \text{ squares total} = 9 \text{ meters}^2$$

2) Multiply L x W

$$3\text{m} \times 3\text{m} = 9 \text{ meters}^2$$

Area of a Triangle

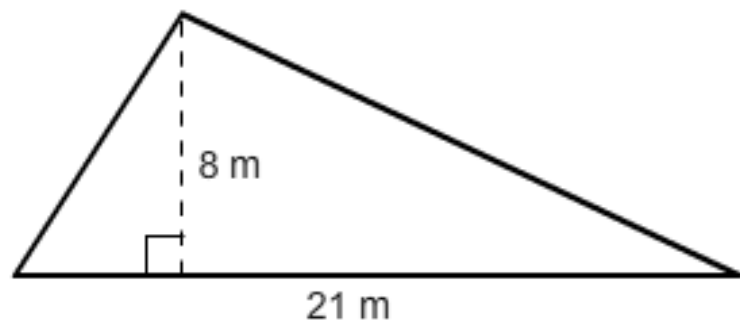
$$A = \frac{bh}{2} \quad \text{or} \quad A = \frac{1}{2}bh$$



Area of Triangles:

Find the area of the triangle.

$$A = \frac{bh}{2}$$



Area = B x H- Cut In Half!

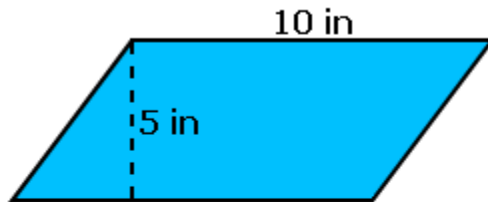
$$A = 21 \times 8 / 2$$

1. Multiply $21 \times 8 = 168$
2. Divide: $168/2 = 84$

Area of Parallelograms:

A= Base x Height (DO NOT ADD, DO NOT USE SLANTED SIDE)

Find the area of the parallelogram below.

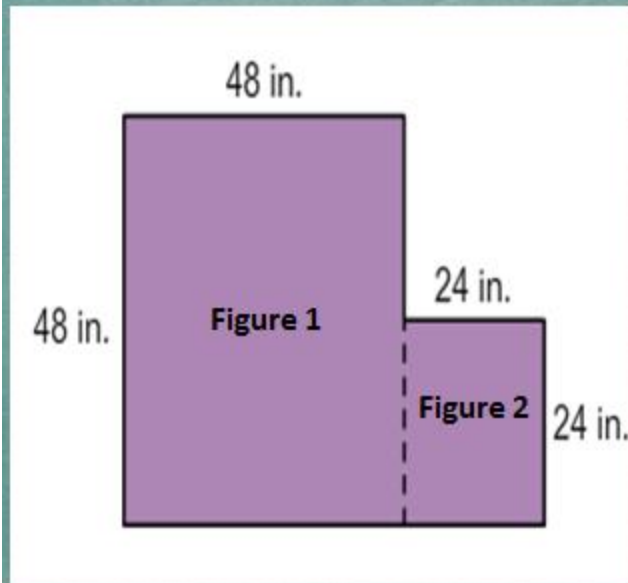


Solution

$$\begin{aligned} \text{Area} &= B \times H \\ &= 10 \text{ in} \times 5 \text{ in} \\ &= 50 \text{ in}^2 \end{aligned}$$

Finding Area: Pieces and Wholes

$$\text{Area} = L \times W$$



1) Find the area of Figure 1

$$48 \text{ in} \times 48 \text{ in} = \underline{\hspace{2cm}}$$

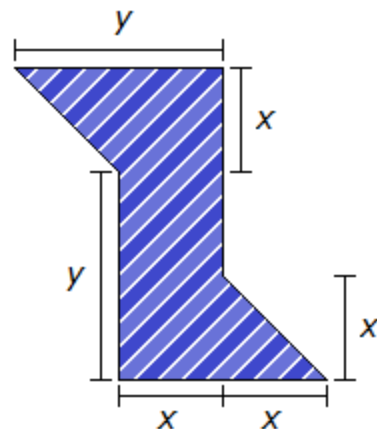
2) Find the area of Figure 2

$$24 \text{ in} \times 24 \text{ in} = \underline{\hspace{2cm}}$$

3) Add both together!

$$2,304 \text{ in}^2 + 576 \text{ in}^2 = \underline{\hspace{2cm}}$$

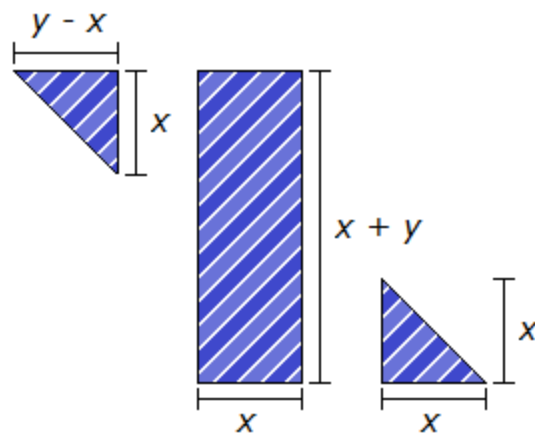
Zane designed the T-shirt logo shown below.



If $x = 4$ inches and $y = 8$ inches, what is the area of the logo?

Solution:

Since this is an unusual shape, break it up into a rectangle and two triangles.



Now, find the area of the rectangle and the area of the two triangles.

$$\begin{aligned}A_{\text{rectangle}} &= (\text{length})(\text{width}) \\ &= (x + y)(x) \\ &= (4 \text{ in} + 8 \text{ in})(4 \text{ in}) \\ &= (12 \text{ in})(4 \text{ in}) \\ &= 48 \text{ in}^2\end{aligned}$$

$$\begin{aligned}A_{\text{top triangle}} &= \frac{1}{2}(\text{base})(\text{height}) \\ &= \frac{1}{2}(y - x)(x) \\ &= \frac{1}{2}(8 \text{ in} - 4 \text{ in})(4 \text{ in}) \\ &= \frac{1}{2}(4 \text{ in})(4 \text{ in}) \\ &= 8 \text{ in}^2\end{aligned}$$

$$\begin{aligned}A_{\text{bottom triangle}} &= \frac{1}{2}(\text{base})(\text{height}) \\ &= \frac{1}{2}(x)(x) \\ &= \frac{1}{2}(4 \text{ in})(4 \text{ in}) \\ &= 8 \text{ in}^2\end{aligned}$$

Finally, add the areas of the rectangle and the two triangles.

$$\begin{aligned}\text{Area} &= 48 \text{ in}^2 + 8 \text{ in}^2 + 8 \text{ in}^2 \\ &= 64 \text{ in}^2\end{aligned}$$

