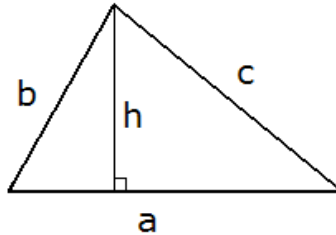


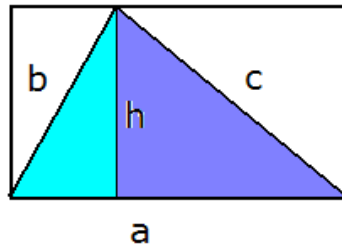
Part 3 - General Triangles

Let us now consider general triangles.

Theorem: The area of a general triangle with sides a , b , c and height h as shown on the picture below is $A = \frac{ah}{2}$.

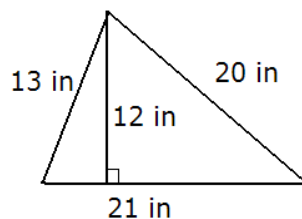


Proof: As before, we will use a previously obtained result. Since the general triangle no longer has a right angle, we create it by drawing in the altitude or height belonging to the side a . Now we split our triangle into two right triangles, and each of them is half of a rectangle.



Our triangle makes up for half of a rectangle, with sides a and h . Thus $A = \frac{ah}{2}$.

Example 3: Find the area of the triangle shown on the picture below.

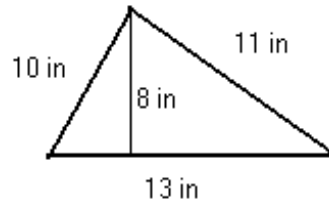


Solution: It is important to notice that we will not need all the information given. We apply the area-formula.

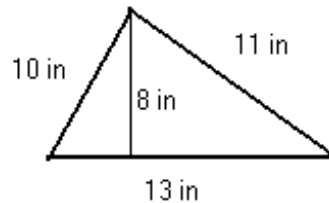
$$A = \frac{ah}{2} = \frac{21 \text{ in} (12 \text{ in})}{2} = \frac{252 \text{ in}^2}{2} = 126 \text{ in}^2$$

Practice Problems

1. Find the perimeter and area of the triangle shown on the picture below. Include units in your computation and answer.



2. Find the perimeter and area of the triangle shown on the picture below. Include units in your computation and answer.



Practice Problems - Answers

1. $P = 34 \text{ in}$ $A = 52 \text{ in}^2$
2. $P = 48 \text{ ft}$ $A = 84 \text{ ft}^2$

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