Triangle (C)

Suppose that $\triangle ABC$ is a triangle. The altitude of $\triangle ABC$ from the side BC is the distance between the side BC and the line through A which is parallel to BC. If BC has length b and the altitude from BC has length h then the area of triangle $\triangle ABC$ is

$$\text{Area} = \frac{1}{2}bh.$$

The perimeter of the triangle is the sum of the lengths of the sides. If the perimeter is $2s$ and the sides have lengths a, b and c then Heron's Formula gives

$$\text{Area} = \sqrt{s(s-a)(s-b)(s-c)}.$$

Exercises

1. What is the area of a triangle with one side of length 5 and altitude from that side equal to 4?

2. What is the area of a triangle whose sides measure 3, 5 and 7?

3. What is the length of a side of an equilateral triangle whose area is 16?

4. Find the length of the equal sides of an isosceles triangle if the area of the triangle is 5 and the remaining side has length 4.