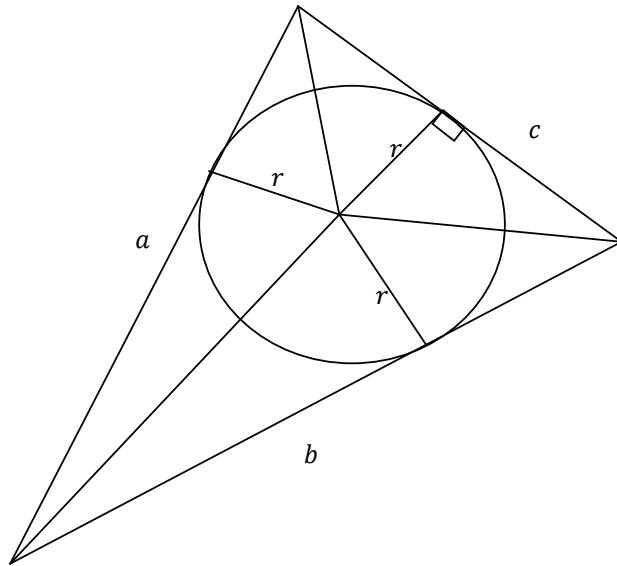


The perimeter of a triangular base of a right prism is 15 cm and radius of the in circle of the triangular base is 3 cm. If the volume of the prism be 270 (cubic cm) then what will be its height?

Solution:



We have

$$S = \frac{1}{2}ra + \frac{1}{2}rb + \frac{1}{2}rc = \frac{1}{2}r(a + b + c) = \frac{1}{2} \cdot 3 \cdot 15 = 22,5 \text{ (cm}^2\text{)}$$

where  $S$  is the square of the triangular base of the right prism. If  $h$  is the height of the right prism then the volume of one is

$$V = Sh = 270,$$

$$22,5h = 270,$$

$$h = 12(\text{cm}).$$

Answer:  $h = 12(\text{cm})$