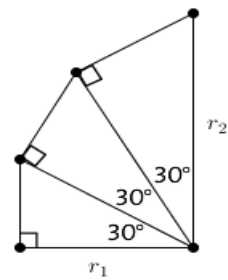


# Problem 56

If  $r_1 = 1$ . Find  $r_2$  in simplest radical form with an integral denominator.



# Answer

$$\boxed{\frac{8\sqrt{3}}{9}}$$

## Explanation

Since  $\cos(30^\circ) = \frac{\text{adj}}{\text{hyp}} = \frac{\sqrt{3}}{2}$ , successive hypotenuses can be found by dividing by  $\frac{\sqrt{3}}{2}$ . So,

$$r_2 = \left(\frac{2}{\sqrt{3}}\right)^3 \Rightarrow r_2 = \frac{8}{3\sqrt{3}} \Rightarrow \frac{8\sqrt{3}}{9}$$