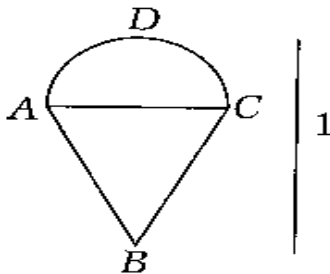


MATH PROBLEM OF THE MONTH (November)

Solution



Answer $\sqrt{3}-1$. Let s = length of a side of the triangle. Then radius of circle is $s/2$. Given that $\triangle ABC$ is equilateral, its height is $\frac{\sqrt{3}}{2}s$. Then the height of the entire figure is $BD = 1 = \frac{s}{2} + \frac{\sqrt{3}}{2}s$

$$\therefore s = \frac{2}{\sqrt{3}+1} = \sqrt{3}-1.$$