

The Problem of the Month  
March 2022

Consider an equilateral  $\triangle ABC$  with each side being of length  $n$ . Let  $M$  be a point inside the triangle such that  $|AM| = 3$ ,  $|BM| = 4$  and  $|CM| = 5$ . See the sketch below. Find the value of  $n$  in the form  $\sqrt{a + b\sqrt{c}}$ , where  $a, b$  and  $c$  are integers.

