



# Problem of the Week

## Problem E

### Paint Free

A cube has edges of length  $n$ , where  $n$  is a positive integer. Three faces, meeting at a corner, are painted red. The cube is then cut into  $n^3$  smaller cubes of unit length. That is, the side lengths of the new cubes are 1 unit.

If exactly 125 of these cubes have no faces painted red, determine the value of  $n$ .

