PROBLEMS FOR SEPTEMBER'08

1. Color the corners of a triangle

Problem provided by Richard Neal, Editor *The Problem Solving Competition*

Starting with 4 colors, say red, white, blue, and green, how many ways can the corners (vertices) of an equilateral triangle be colored? Note a vertex is dimensionless so that it can't actually be"colored", It is more proper to say we are assigning colors to the vertices. Assume you can look at the triangle from front or back so that some back views are equivalent to some front views, and visa versa. Similarly, assume rotated views are equivalent. We say, in other words that reflections and rotations are allowed. Show all your work.

2. Color the corners of a square

Problem provided by Richard Neal, Editor *The Problem Solving Competition*

Starting with 4 colors, say red, white, blue, and green, how many ways can the corners (vertices) of a square be colored? Note a vertex is dimensionless so that it can't actually be"colored", It is more proper to say we are assigning colors to the vertices. Assume that reflections and rotations are allowed. Show all your work.

Winner gets a recognition on the problem board and the math-club website and a $5 gift card from the bookstore.

Copies available below! Feel free to take one and enjoy! Submit your solutions to one of the Math Professors at school by October 1. You can also find a copy at the Math Club website at

http://faculty.randolphcollege.edu/ykurt/mathclub/mathclub.htm.