

Problem of the Week 6: Fortunate Numbers

Call a natural number fortunate if it can be written with four equal digits in some base $b \in \mathbb{Z}^+$.

a) Clearly 2222 is fortunate, why is 2000 fortunate?

b) Find the greatest fortunate number less than 2000.

Justify your answers. ¹

¹Posted: 4/4/05 Submit your answers (by e-mail: aydinn@kenyon.edu or hard copy) before 4 pm on 4/15/05 to Noah Aydin, Mathematics Dept.