



Problem of the Week

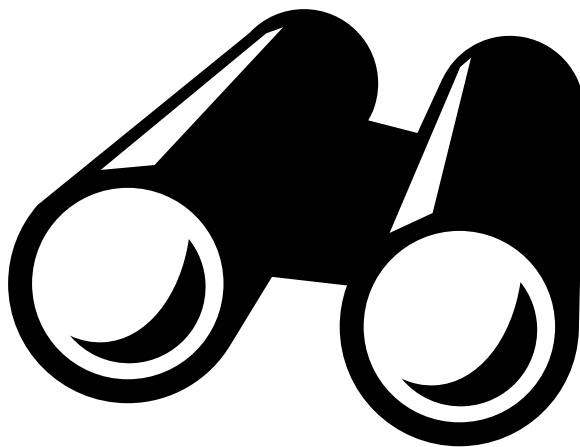
Problem E

Looking for Possibilities

Determine all possible ordered pairs of positive integers (a, b) such that

$$\frac{1}{a} + \frac{2}{b} = \frac{8}{2a + b} \quad \text{and} \quad 1963 \leq 4a + 7b \leq 2016.$$

The notation $1963 \leq 4a + 7b \leq 2016$ means that for positive integers a and b , $4a + 7b \geq 1963$ and $4a + 7b \leq 2016$.



In the inequality the choice of 2016 is probably obvious but why 1963?

The Centre for Education in Mathematics and Computing (CEMC) has become Canada's largest and most recognized outreach organization for promoting and creating activities and materials in mathematics and computer science. The CEMC is housed within the Faculty of Mathematics at the University of Waterloo. It was founded in 1995 with origins dating back to **1963**.

