



Problem of the Week

Problem E

Three Lists

Ameya has two lists, List 1 and List 2, which each have six entries that are consecutive positive integers. The smallest entry in List 1 is a and the smallest entry in List 2 is b , and $a < b$.

Ameya creates a third list, List 3. The thirty-six entries in List 3 come from the product of each number in List 1 with each number of List 2. (There could be repeated numbers in List 3.)

Suppose that List 3 has 49 as an entry, has no entry that is multiple of 64, and has an entry larger than 75. Determine all possible pairs (a, b) .

$$1 \times 2 = 3 ?$$
