Level D

Tracy gave the following explanation to her friend.

I have found a special set of fractions that I call Consecutive Sum Fractions. To be a Consecutive Sum Fraction, it must be equivalent to 1. You start with the unit fraction and then add each larger fraction, the next natural number numerator of the same denominator, until you reach exactly one. For example, 15/15 is a Consecutive Sum Fraction, because;

$1/15 + 2/15 + 3/15 + 4/15 + 5/15 = 1$

Not all equivalent fractions equal to one are Consecutive Sum Fractions. For example consider 12/12. The follow partial sum approaches 1.

$1/12 + 2/12 + 3/12 + 4/12 = 10/12$

But it is still smaller than 1. If we add the next consecutive fraction, we get a fraction larger than 1.

$1/12 + 2/12 + 3/12 + 4/12 + 5/12 = 15/12$

Therefore, 12/12 is not a Consecutive Sum Fraction.

Which fractions are Consecutive Sum Fractions?

How can you determine or predict which will be Consecutive Sum Fractions?

Determine a means to generate all fractions that are Consecutive Sum Fractions.