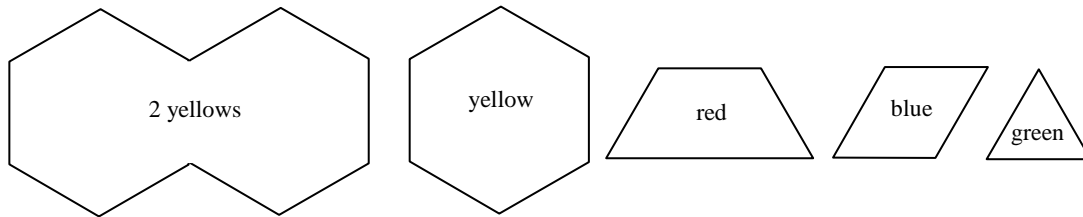


**Math 365 Lecture Notes**  
**Section 5.2 – Addition and Subtraction of Rational Numbers**

☆ **Activity 1**



1) Describe the process of using pattern blocks to find

- $\frac{3}{4} + \frac{1}{2} - \frac{1}{6}$

- $1\frac{5}{12} + 2\frac{1}{4}$

- $3\frac{5}{12} - 1\frac{1}{2}$

2) Describe the process of adding and subtracting fractions without pattern blocks.

3) Describe the process of adding mixed numbers without pattern blocks.

4) Describe the process of subtracting mixed numbers without pattern blocks.

★ **Discussion Questions/Problems**

1) Write a story problem to explain why the procedure for subtracting  $\frac{3}{4} - \frac{2}{3}$  makes sense. In particular, explain why a common denominator is necessary. Support your story problem using pictures and a number line.

2) When we add and subtract fractions, is it true that we *must* use the least common denominator? Why or why not? What are the advantages of using the least common denominator when adding or subtracting fractions? Use pictures or a number line to help establish your argument.

3) Letty thinks it would be easier to add fractions by adding the numerators and adding the denominators. For example, Letty wants to compute  $\frac{3}{5} + \frac{2}{3}$  as follows:

$$\frac{3}{5} + \frac{2}{3} = \frac{3+2}{5+3} = \frac{5}{8}$$

Letty uses the illustration below to explain her reasoning. Is Letty's method valid? Why doesn't Letty's illustration prove that fractions can be added her way? Do not just state the proper way to add fractions; explain what is wrong with Letty's reasoning.

