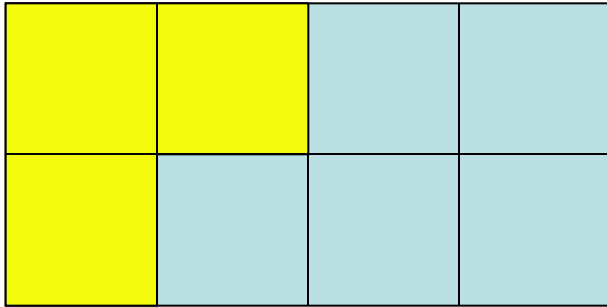




$$\frac{3}{8}$$

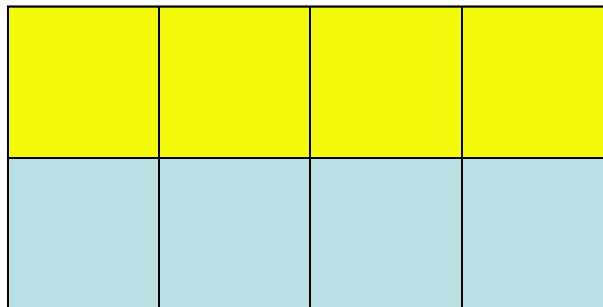
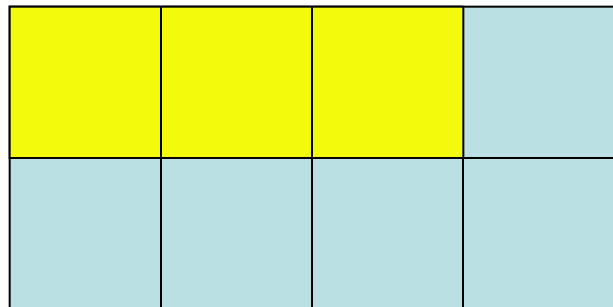
Adding and Subtracting Fractions

By Graeme Henschel

<http://hensch-maths.wikispaces.com>

Adding Fractions with common denominators

$$\frac{3}{8} + \frac{4}{8} = \frac{7}{8}$$



Adding Fractions with different denominators

Problem:

You can't add fractions with different denominators without getting them **ready** first. They will be **ready** to add when they have common denominators

Solution:

Turn fractions into equivalent fractions with a **common denominator** that is find the Lowest Common Multiple (LCM) of the two denominators



Finding the Lowest Common Denominator

- The lowest common multiple of two numbers is the lowest number in BOTH lists of multiples

$$\frac{1}{2} + \frac{1}{3}$$



Multiples of 2 are 2, 4, 6, 8, 10.....
Multiples of 3 are 3, 6, 9, 12,

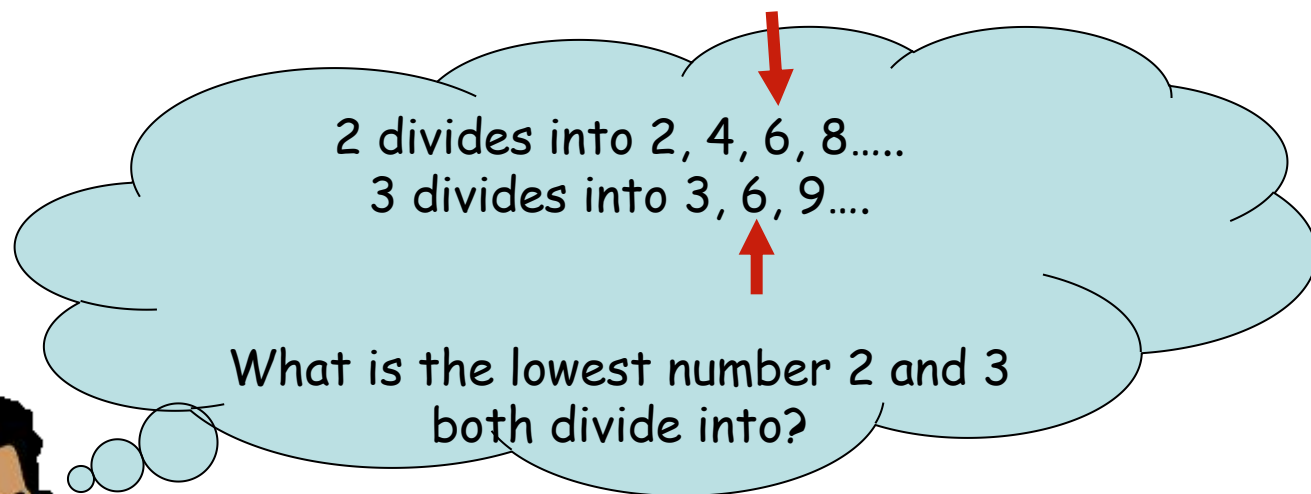
What is the lowest common multiple?



Finding the Lowest Common Denominator

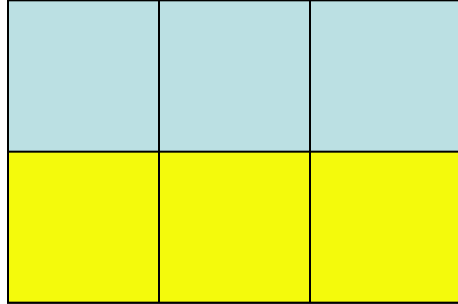
- The lowest common multiple of two numbers is the lowest number they will BOTH divide into

$$\frac{1}{2} + \frac{1}{3}$$

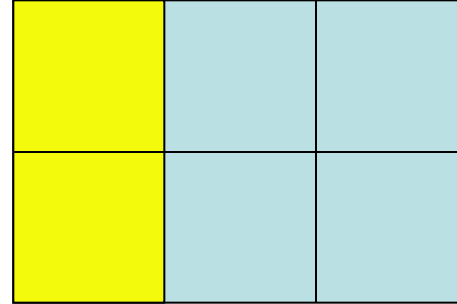


$$\frac{1}{2} + \frac{1}{3}$$

You can't add fractions with different denominators

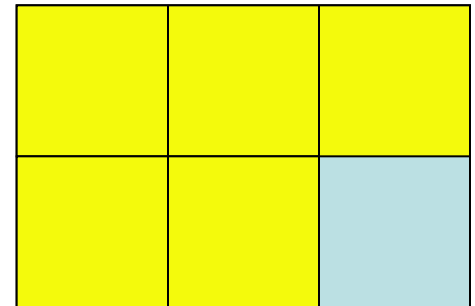


+



The Lowest Common Multiple of 2 and 3 is 6 so turn all fractions into sixths

$$\frac{1}{2} \times \frac{3}{3} + \frac{1}{3} \times \frac{2}{2} = \frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

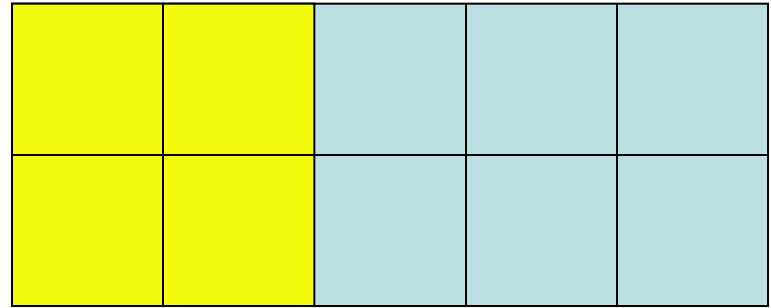
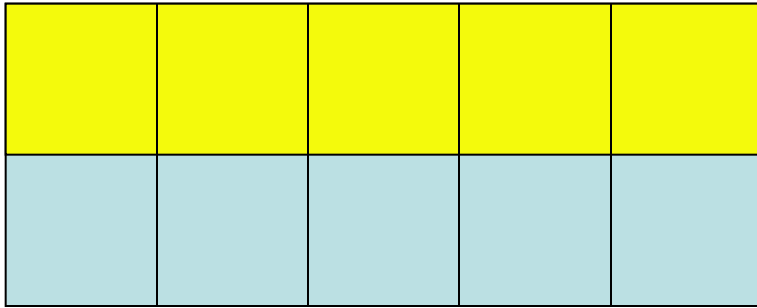


Special form of 1

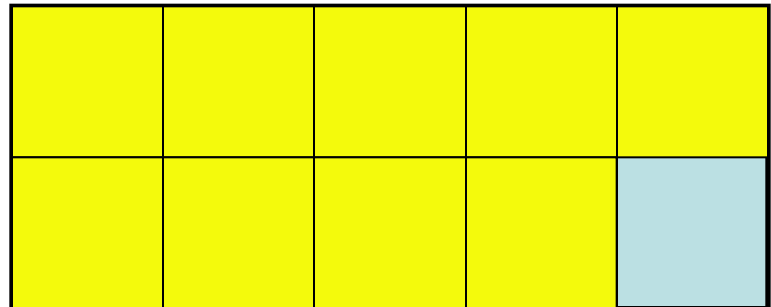


$$\frac{1}{2} + \frac{2}{5}$$

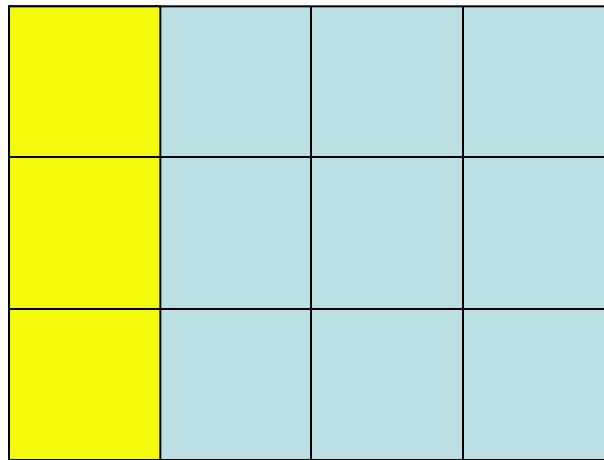
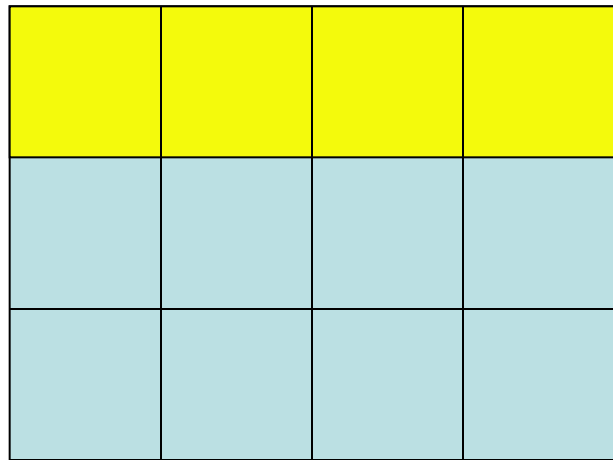
Lowest common denominator is 10 so make all fractions tenths



$$\frac{5}{10} + \frac{4}{10} = \frac{9}{10}$$

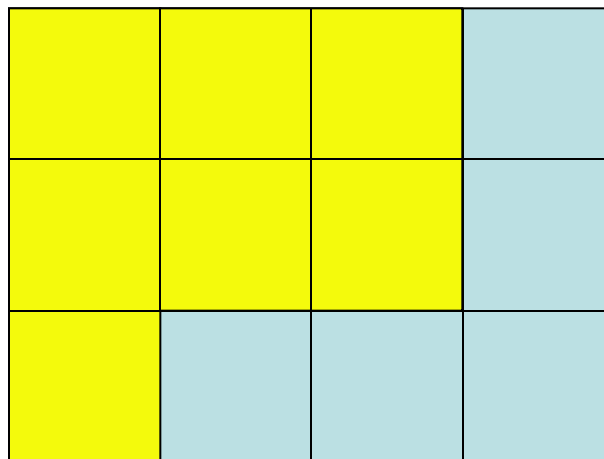


$$\frac{1}{3} + \frac{1}{4}$$

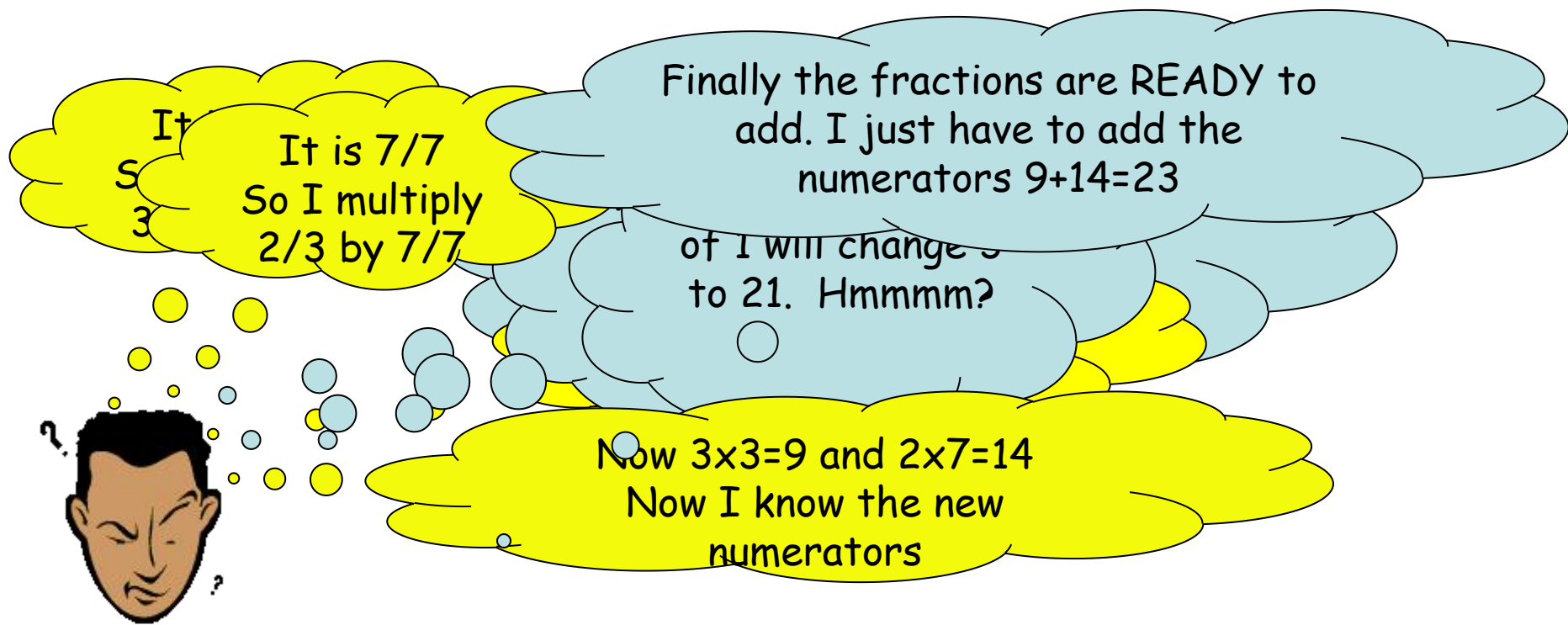


Turn both fractions into twelfths

$$\frac{4}{12} + \frac{3}{12} = \frac{7}{12}$$



$$\boxed{\frac{3}{3}} \times \frac{3}{7} + \frac{2}{3} \times \boxed{\frac{7}{7}} = \frac{?}{21} + \frac{?}{21} = \frac{9}{21} + \frac{14}{21} = \frac{23}{21} = 1\frac{2}{21}$$



Adding Mixed Numbers

- Separate the fraction and the whole number sections, add them separately and recombine at the end

$$2\frac{1}{2} + 5\frac{1}{3} = \quad + \quad + \quad +$$

$$= 7 + \frac{5}{6}$$

$$= 7\frac{5}{6}$$