Fix Those Fractions!! Self-Help Guide!

Fractions and Mixed Numbers

Students often prefer to change an improper fraction to a mixed number. It may also be necessary to change a mixed number to an improper fraction. Either form is acceptable although algebraic processes typically require the fraction to be improper.

To change an improper fraction to a mixed number, divide the numerator by the denominator to produce a whole number and a remainder which will become the numerator of the fractional part of the mixed number. Recall that the fraction bar is actually a division symbol.

Example #3: Change $\dfrac{13}{5}$ to a mixed number.

Improper fraction (numerator larger than denominator): $\dfrac{13}{5}$

Divide numerator by denominator: $13 \div 5 = 2$ with a remainder of 3

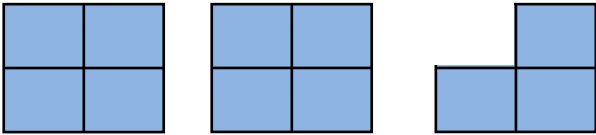Represent remainder as a fraction: $= 2\frac{3}{5}$

To change a mixed number to an improper fraction, multiply the whole number by the denominator and add the numerator, placing that number over the given denominator.

Example #4: Change $2\dfrac{3}{4}$ to an improper fraction.

To convert $2\frac{3}{4}$ to an improper fraction, multiply 4 by 2 then add 3, and put this number (11) over the same denominator (4):

$$2\frac{3}{4} = \frac{4 \times 2 + 3}{4} = \frac{11}{4}$$

The diagram below illustrates the reason for this process.

$2\frac{3}{4} =$

$= \quad \frac{4}{4} \quad + \quad \frac{4}{4} \quad + \quad \frac{3}{4} \quad = \frac{11}{4}$

OR

$2\frac{3}{4} = \qquad 2\left(\frac{4}{4}\right) \quad + \quad \frac{3}{4}$

$= \qquad \frac{8}{4} \quad + \quad \frac{3}{4} \quad = \frac{11}{4}$