Example : <u>Dividing Fractions</u>, step by step solution

Finally, let's learn how to divide one mixed number with another mixed number. For example, divide $4\frac{4}{7}$ by $1\frac{13}{35}$.

Solution: The solution is done step by step to make you understand dividing fractions, as this solution will cover all the steps explained so far to divide fractions.

Step 1: $\quad 4\frac{4}{7} \div 1\frac{13}{35}$

> Write both the mixed number as shown to start the solution

Step 2: $\quad = \dfrac{32}{7} \div \dfrac{48}{35}$

> Convert both mixed numbers into improper fractions. For the first mixed number new numerator = 7x4+4 = 28+4 = 32 and for the second mixed number the new numerator = 35x1+13 = 35+13 = 48. Denominators of both improper fractions remain the same as their respective mixed numbers.

Step 3: $\quad = \dfrac{\overset{2}{\cancel{32}}}{\underset{1}{\cancel{7}}} \times \dfrac{\overset{5}{\cancel{35}}}{\underset{3}{\cancel{48}}}$

> Now to change the division sign into multiply sign, flip the second fraction (divisor) OR reciprocal of divisor fraction. 32 and 48 have gcf of 16; such that, 16 goes into 32, 2 times and 16 into 48, 3 times. Same way 7 and 35 have gcf of 7 such that 7 goes into 7, once and into 35, 5 times.

Step 4: $\quad = \dfrac{2\times5}{1\times3}$

> Now, multiply new numerators 2 and 5, and new denominators 1 and 3 to get 10 and 3 respectively.

Step 5: $\quad = \dfrac{10}{3}$

> $\dfrac{10}{3}$ is an improper fraction and convert it into a mixed number to get your final answer.

Step 6: $\quad = 3\frac{1}{3}$

To Remember:

To multiply fractions, first of all reduce the fractions to lowest terms. You can reduce numerator of a fraction with the denominator of same fraction or denominator of any other fraction and vice versa.

When you have to divide fractions, if fractions are mixed numbers convert them into improper fractions. Then convert the divide sign into multiplication sign by flipping the divisor fraction or the fraction after the divide sign.