Subtracting Mixed Fractions and Borrowing

(Different Denominator Work)

Example:

Ⓐ $5\frac{2}{5} - 3\frac{7}{10}$

Ⓑ $5\frac{2}{5} \overset{\times 2}{} = \frac{4}{10}$ $-3\frac{7}{10} \quad \frac{7}{10}$

Ⓒ $\therefore 5 \cdot \frac{4}{10} + \frac{10}{10}$ $-3\frac{7}{10}$

Ⓓ $4\frac{14}{10} - 3\frac{7}{10} = 1\frac{7}{10}$

A) When the denominators of the fraction you are subtracting are different, you must find the lowest common denominator. Using the example, you must find the lowest common denominator of 5 and 10. The lowest common denominator or least common multiple os 10. We find the LCM by counting the multiples of both denominators.

5 - 5, 10, 15, 20 ← The LCM of 5 and 10 is 10!
10 - 10, 20, 30

B) After you find your LCM, rewrite both fractions. Because one of the had the LCM for a denominator, you simply copy that fraction over. The denominator of five has to be turned into the LCM. Because you have to multiply the denominator of 5 by 2 to get 10, you also have to increase the denominator by the same factor. Two fifths turns into four tenths.

c) In the example, you can not take 7 away from 4 so you must borrow from the whole number. Because you are working with tenths, borrow one whole in the form of ten tenths. $\frac{10}{10}$ Add to the fraction that is too small.

d) The top fraction is now large enough to be subtracted from!

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1) $16\frac{1}{2} - 5\frac{4}{7}$

2) $12\frac{1}{6} - 9\frac{3}{4}$

3) $14\frac{4}{9} - 11\frac{7}{18}$

4) $4\frac{4}{5} - 3\frac{2}{10}$

5) $19\frac{1}{6} - 6\frac{4}{9}$

6) $32\frac{1}{3} - 24\frac{1}{5}$

7) $24\frac{3}{16} - 16\frac{1}{4}$

8) $9\frac{3}{6} - 6\frac{2}{3}$

9) $64\frac{1}{3} - 45\frac{4}{9}$

10) $32\frac{1}{6} - 10\frac{2}{12}$

11) $86\frac{3}{8} - 83\frac{5}{16}$

12) $4\frac{1}{6} - 2\frac{5}{24}$