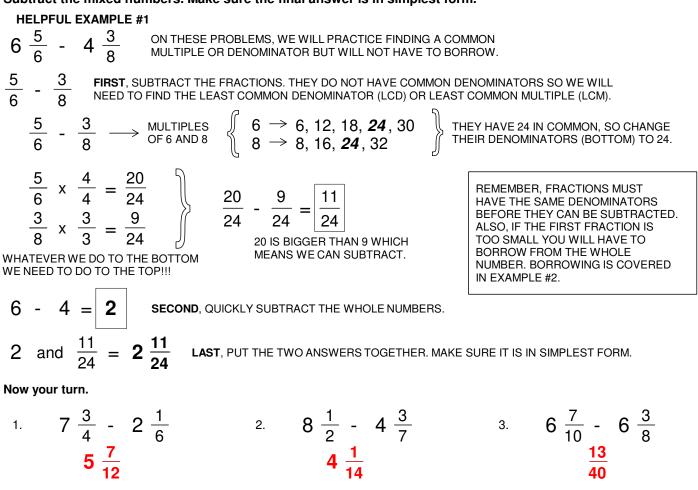
## SUBTRACTING MIXED NUMBERS WITH UNLIKE DENOMINATORS

WITHOUT BORROWING



4. 
$$4\frac{5}{9} - \frac{5}{12}$$
  
 $4\frac{5}{36}$ 

5.

$$3 \frac{5}{17} - 2$$
  
 $1 \frac{5}{17}$ 

6.

ANSWERS

7. 
$$6\frac{2}{3} - 3\frac{4}{15}$$
  
8.  $2\frac{7}{12} - \frac{5}{9}$   
9.  $5\frac{3}{5} - 4\frac{2}{11}$   
 $3\frac{2}{5}$   
 $2\frac{1}{36}$   
9.  $5\frac{3}{5} - 4\frac{2}{11}$ 

Circle the greatest (largest) fraction in each group.

10. 
$$(\frac{4}{5})$$
 or  $\frac{2}{3}$  11.  $(\frac{5}{7})$  or  $\frac{5}{8}$  12.  $(\frac{2}{9})$  or  $\frac{3}{14}$  13.  $\frac{6}{13}$  or  $(\frac{9}{17})$ 

## SUBTRACTING MIXED NUMBERS

WITH UNLIKE DENOMINATORS WITH BORROWING

## Subtract the mixed numbers. Make sure the final answer is in simplest form.

## **HELPFUL EXAMPLE #2** ON THESE PROBLEMS, WE WILL PRACTICE FINDING A COMMON MULTIPLE OR DENOMINATOR AND LEARN HOW TO BORROW. $7\frac{1}{5} - 3\frac{1}{3}$ **FIRST**, SUBTRACT THE FRACTIONS. THESE FRACTIONS ALSO DO NOT HAVE COMMON DENOMINATORS SO WE WILL NEED TO FIND THE LEAST COMMON DENOMINATOR. $\frac{1}{5} - \frac{1}{3}$ $\frac{1}{5} - \frac{1}{3} \longrightarrow \underset{OF \ 5 \ \text{AND} \ 3}{\text{MULTIPLES}} \left\{ \begin{array}{c} 5 \rightarrow 5, \ 10, \ \textbf{15}, \ 20 \\ 3 \rightarrow 3, \ 6, \ 9, \ 12, \ \textbf{15}, \ 18 \end{array} \right\} \text{ THEY HAVE 15 IN COMMON, SO CHANGE THEIR DENOMINATORS (BOTTOM) TO 15.}$ $\frac{1}{5} \times \frac{3}{3} = \frac{3}{15}$ and $\frac{1}{3} \times \frac{5}{5} = \frac{5}{15} \longrightarrow \frac{3}{15} - \frac{5}{15} = JUST CAN'T DO IT$ REMEMBER, WHATEVER WE DO TO THE 3 IS TOO SMALL SO WE BOTTOM WE NEED TO DO TO THE TOP!!! NEED TO BORROW. BEFORE WE START TO BORROW LETS TAKE A $\longrightarrow$ 7 $\frac{1}{5}$ = 7 $\frac{3}{15}$ and 3 $\frac{1}{3}$ = 3 $\frac{5}{15}$ THE FRACTIONS HAVE COMMON DENOMINATORS $\longrightarrow$ 7 $\frac{3}{15}$ - 3 $\frac{5}{15}$ $7\frac{3}{15} = 6 + 1 + \frac{3}{15} = 6 + \left|\frac{15}{15}\right| + \frac{3}{15} = 6\frac{18}{15}$ THIS IS WHAT NEEDS TO BE DONE. WE NEED TO TAKE <u>ONE</u> AWAY FROM SEVEN AND GIVE IT TO THE FRACTION, BUT WE NEED TO TURN THAT <u>ONE</u> INTO A FRACTION TOO. $7\frac{3}{15}$ is the same as $6\frac{18}{15}$ $6 \frac{18}{15} - 3 \frac{5}{15}$ NOW THE PROBLEM LOOKS LIKE THIS AND WE CAN FOLLOW THE BASIC STEPS TO SUBTRACT THESE TWO MIXED NUMBERS. $\frac{18}{15} - \frac{5}{15} = \left| \frac{13}{15} \right|$ FIRST, SUBTRACT THE FRACTIONS. 6 - 3 = 3 SECOND, SUBTRACT THE WHOLE NUMBERS. 3 and $\frac{13}{15} = 3\frac{13}{15}$ LAST, PUT THE TWO ANSWERS TOGETHER. IS IT IN SIMPLEST FORM? Now your turn. $6 \frac{4}{11} - 1 \frac{1}{2} \qquad 2. \qquad 9 \frac{1}{4} - 3 \frac{3}{8} \qquad 3. \qquad 3 \frac{5}{6} - 2 \frac{7}{10}$ 1. $4\frac{19}{22}$ $5\frac{7}{8}$ $1\frac{2}{15}$ $7\frac{2}{5} - 2\frac{2}{3}$ 5. $4\frac{5}{6} - \frac{11}{15}$ 6. $8\frac{2}{3} - 4\frac{3}{4}$ 4. $4\frac{11}{15}$ $3\frac{11}{12}$ $4\frac{1}{10}$