Subtracting Mixed Numbers

The Plainville Zoo has had elephants for 12\(\frac{2}{3}\) years. The zoo has had zebras for 5\(\frac{1}{2}\) years. How many years longer has the zoo had elephants?

Step 1: Write equivalent fractions with the least common denominator. You can use fraction strips.

\[
\begin{align*}
12\frac{2}{3} &= \frac{38}{3} \\
5\frac{1}{2} &= \frac{11}{2}
\end{align*}
\]

Step 2: Find the difference of 12\(\frac{2}{3}\) – 5\(\frac{1}{2}\). Subtract the fractions. Then subtract the whole numbers. Simplify the difference if possible.

\[
\begin{align*}
\frac{38}{3} - \frac{11}{2} &= \frac{76}{6} - \frac{33}{6} = \frac{43}{6} \\
12 - 5 &= 7
\end{align*}
\]

So, 12\(\frac{2}{3}\) − 5\(\frac{1}{2}\) = 7\(\frac{1}{6}\) years.

Example 2: Sometimes you may have to rename a fraction so you can subtract. Find the difference of 6 − 2\(\frac{3}{8}\).

\[
\begin{align*}
6 - 2\frac{3}{8} &= 5\frac{8}{8} - 2\frac{3}{8} \\
&= 3\frac{5}{8}
\end{align*}
\]

For 1 through 4, find each difference. Simplify, if possible. Remember: You may have to rename a fraction in order to subtract.

1. \(4\frac{3}{5} - 2\frac{1}{3}\)  
2. \(5\frac{6}{7} - 1\frac{1}{2}\)  
3. \(3 - 1\frac{3}{4}\)  
4. \(6\frac{5}{6} - 5\frac{1}{2}\)

5. To find the difference of 7 − 3\(\frac{5}{12}\), how do you rename the 7?

6. Robyn ran 5\(\frac{3}{4}\) miles last week. She ran 4\(\frac{1}{10}\) miles this week. How many more miles did she run last week?