

Mixed Numbers and Improper Fractions

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EMC 1

• Lets say you have a mixed number of 1 and $\frac{5}{8}$

You can change this into the number $\frac{13}{8}$.

For converting mixed numbers to improper fractions, the first thing you do is multiply. For example, the mixed number 3 and $\frac{4}{5}$ you multiply the whole number by the denominator.

$$3 \times 5 = 15$$

Then you add the numerator to your answer $15 + 4$ which is 19. So the 19 goes on the top and then the denominator from the mixed fraction goes on the bottom so you end up with the improper fraction $19/5$.

Convert 5 and 3/8 to an improper fraction

- First, multiply the whole number and the denominator

$$5 \times 8 = 40$$

- Then, add the numerator

$$40 + 3 = 43$$

- Finally, use the 43 as your numerator and the original denominator (8) as the denominator.

$$5 \text{ and } 3/8 = 43/8$$

Convert 7 and 3/5 to an improper fraction

- First, multiply the whole number and the denominator.

$$7 \times 5 = 35$$

- Then, add the numerator

$$35 + 3 = 38$$

- Finally, 38 is your numerator and the original denominator (5) will be the denominator in your answer.

$$7 \text{ and } 3/5 = 38/5$$

Your turn!

- Turn the following mixed numbers into improper fractions:

2. 4 and $\frac{3}{7}$

3. 9 and $\frac{1}{2}$

4. 5 and $\frac{8}{9}$

5. 1 and $\frac{8}{11}$

Changing Improper Fractions to Mixed Numbers

- The first step to changing improper fractions to mixed numbers is to **divide**. For example, the fraction $16/3$ can be changed to a mixed number. The first step is to divide. You divide the 3 into 16 and you get 5 with a remainder of 1.

$$\begin{array}{r} 5 \\ 3 \overline{) 16} \\ \underline{- 15} \\ 1 \end{array}$$

Your remainder is one. So the remainder will go in the numerator:

$$5 \frac{1}{5} \leftarrow$$

So far your mixed number should look like this.

The denominator from the improper fraction goes on the denominator of the mixed number:

$$\frac{16}{3} \rightarrow 5 \frac{1}{3}$$

The number 5 is the whole number of the fraction, and the remainder of what you had is the numerator. Then the denominator stays the same. So your answer would look like this:

This is how you change improper fractions to mixed numbers. $5 \frac{1}{3}$

Convert 13/7 into a mixed number

- Divide 13 by 7

$$13 \div 7 = 1 \text{ with a remainder of } 6$$

- The 1 will be your whole number
- The 7 is the denominator
- The remainder is the numerator

$$13/7 = 1 \text{ and } 6/7$$

Convert $18/5$ to a mixed number

- Divide 18 by 5

$$18 \div 5 = 3 \text{ R}3$$

- The whole number is 3
- The denominator is 5
- The numerator is the remainder 3

$$18/5 = 3 \text{ and } 3/5$$



You do it!

Convert the improper fractions into mixed numbers

2. $\frac{19}{3}$

3. $\frac{12}{7}$

4. $\frac{17}{8}$

5. $\frac{13}{5}$