

3.6 Mixed-Number Notation

1. What is a mixed number? A mixed number is the sum of a whole number and a proper fraction. We leave out the plus sign when we write the number.

Example:

$$3 + \frac{1}{8} = 3\frac{1}{8} \quad (\text{In mixed - number notation we leave out the plus sign.})$$

2. Changing Mixed Numbers to Improper Fractions: Mixed numbers can be written as improper fractions: To write a mixed number as an improper fraction,

- Multiply the denominator of the proper fraction by the whole number and add the numerator of the proper fraction to your result. This gives you the numerator of the improper fraction
- Carry along the denominator of the proper fraction for the denominator of the improper fraction.

Example: Convert $5\frac{3}{4}$ to an improper fraction.

$$5\frac{3}{4} = \frac{4 \cdot 5 + 3}{4} = \frac{23}{4}$$

Example: Convert each of the following mixed numbers to improper fractions.

a. $5\frac{3}{7}$

b. $7\frac{5}{8}$

3. Changing improper fractions to mixed numbers: To change an improper fraction to a mixed number, divide the numerator by the denominator. The quotient is the whole number part of the mixed number, the remainder is the numerator in the mixed number's proper fraction, and the divisor is the denominator in that fraction.

Example: Convert $\frac{21}{5}$ to a mixed number.

$$5 \overline{)21}^4 \text{ with a remainder of } 1$$

$$\text{so } \frac{21}{5} = 4 \frac{1}{5}$$

Example: Convert each of the following improper fractions to a mixed number.

a. $\frac{34}{7}$

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

c. $\frac{43}{5}$