

Simplifying Fractions

- A fraction is in simplest form when the greatest common factor (GCF) of the numerator and the denominator is 1.
- To write a fraction in simplest form, divide both the numerator and the denominator by the GCF.

Examples Write each fraction in simplest form.

1 $\frac{6}{9}$

The GCF of 6 and 9 is 3.

$$\frac{6}{9} = \frac{2}{3} \quad \text{Divide 6 and 9 by 3.}$$

2 $\frac{4}{20}$

The GCF of 4 and 20 is 4.

$$\frac{4}{20} = \frac{1}{5} \quad \text{Divide 4 and 20 by 4.}$$

- To change an improper fraction to a mixed number, divide the numerator by the denominator. Write the remainder as a fraction in simplest form.
- To change a mixed number to an improper fraction, multiply the whole number by the denominator and add the numerator. Write this sum over the denominator.

Examples 3 Write $\frac{8}{5}$ as a mixed number.

$\frac{8}{5}$ means $8 \div 5$.

$$\begin{array}{r} 1 \\ 5 \overline{)8} \\ \underline{-5} \\ 3 \end{array} \rightarrow 1 \text{ R}3 \text{ or } 1\frac{3}{5}$$

4 Write $2\frac{3}{4}$ as an improper fraction.

$$\begin{aligned} 2\frac{3}{4} &= \frac{(2 \times 4) + 3}{4} \\ &= \frac{8 + 3}{4} \\ &= \frac{11}{4} \end{aligned}$$