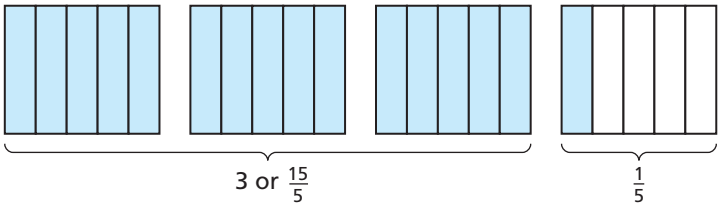
Name _____ Date _____

Mixed Numbers and Improper Fractions

A **mixed number** is the sum of a whole number and a fraction. An **improper fraction** is a fraction with a numerator that is greater than or equal to the denominator.

The shaded part of the model represents the mixed number $3\frac{1}{5}$ and the improper fraction $\frac{16}{5}$.



Example 1 **Write $4\frac{5}{8}$ as an improper fraction.**

$4\frac{5}{8} = 4 + \frac{5}{8}$ Definition of mixed number

$= \frac{32}{8} + \frac{5}{8}$ 1 whole $= \frac{8}{8}$. So, 4 wholes $= \frac{32}{8}$.

$= \frac{37}{8}$ Add.

▶ $4\frac{5}{8}$ written as an improper fraction is $\frac{37}{8}$.

Example 2 **Write $\frac{19}{7}$ as a mixed number.**

$7\overline{)19}$ Divide the numerator, 19, by the denominator, 7. The quotient is 2.

$\frac{14}{5}$ The remainder is 5. Write the remainder as a fraction, $\frac{\text{remainder}}{\text{divisor}}$.

▶ $\frac{19}{7}$ written as a mixed number is $2\frac{5}{7}$.

Practice

Check your answers at BigIdeasMath.com.

Write the mixed number as an improper fraction.

1. $1\frac{4}{5}$ $\frac{9}{5}$
2. $3\frac{1}{6}$ $\frac{19}{6}$
3. $10\frac{7}{10}$ $\frac{107}{10}$
4. $2\frac{12}{13}$ $\frac{38}{13}$
5. $6\frac{5}{9}$ $\frac{59}{9}$
6. $4\frac{3}{20}$ $\frac{83}{20}$
7. $7\frac{6}{7}$ $\frac{55}{7}$
8. $25\frac{2}{3}$ $\frac{77}{3}$

Write the improper fraction as a mixed number.

9. $\frac{9}{2}$ $4\frac{1}{2}$
10. $\frac{13}{5}$ $2\frac{3}{5}$
11. $\frac{25}{3}$ $8\frac{1}{3}$
12. $\frac{31}{9}$ $3\frac{4}{9}$
13. $\frac{59}{10}$ $5\frac{9}{10}$
14. $\frac{43}{4}$ $10\frac{3}{4}$
15. $\frac{35}{8}$ $4\frac{3}{8}$
16. $\frac{67}{11}$ $6\frac{1}{11}$

17. Find the improper fraction with a denominator of 8 that is equivalent to $3\frac{1}{2}$. $\frac{28}{8}$

18. Find the improper fraction with a denominator of 12 that is equivalent to $5\frac{3}{4}$. $\frac{69}{12}$