Name _____ Date _____ Class _____

MATH SKILLS

Improper Fractions and Mixed Numbers

An **improper fraction** is a fraction whose numerator is greater than its denominator, such as $\frac{13}{5}$. An improper fraction can be changed to a **mixed number,** which is a whole number with a fraction, such as $2\frac{3}{5}$. Likewise, a mixed number can be changed to an improper fraction when it is necessary for doing mathematical operations with these numbers.

PROCEDURE: To change an improper fraction to a mixed number, divide the numerator by the denominator and write the quotient as the whole number. If there is a remainder, place it over the denominator to make the fraction of the mixed number.

SAMPLE PROBLEM A: Change $\frac{17}{5}$ to a mixed number.

Step 1: Divide the numerator by the denominator.

$17 \div 5 = 3$, remainder 2

Step 2: Write the quotient as the whole number, and put the remainder over the original denominator as the fraction.

$\frac{17}{5} = 3\frac{2}{5}$

PROCEDURE: To change a mixed number to an improper fraction, multiply the denominator of the fraction by the whole number. Then add that product to the numerator. Finally, write the sum over the denominator.

SAMPLE PROBLEM B: Change $4\frac{2}{3}$ to an improper fraction.

Step 1: Multiply the denominator by the whole number.

$3 \times 4 = 12$

Step 2: Add the product to the numerator, and write the sum over the denominator.

$12 + 2 = 14$ $\quad 4\frac{2}{3} = \frac{14}{3}$

1. Write True or False next to each equation.

a. $3\frac{1}{3} = \frac{9}{3}$ _____ **b.** $\frac{23}{4} = 5\frac{3}{4}$ _____

c. $\frac{25}{4} = 5\frac{1}{6}$ _____ **d.** $9\frac{7}{10} = \frac{97}{10}$ _____

2. Change each improper fraction to a mixed number, and change each mixed number to an improper fraction.

a. $\frac{16}{3} =$ _____ **b.** $6\frac{1}{3} =$ _____

c. $3\frac{5}{8} =$ _____ **d.** $\frac{27}{5} =$ _____