Your Turn

1. Write each fraction as a mixed number fraction, in its simplest form.

a. $\frac{12}{5}$
$2\frac{2}{5}$

b. $\frac{8}{3}$
$2\frac{2}{3}$

c. $\frac{15}{6}$
$2\frac{3}{6} = 2\frac{1}{2}$

d. $\frac{4}{3}$
$1\frac{1}{3}$

e. $\frac{20}{9}$
$2\frac{2}{9}$

f. $\frac{31}{17}$
$1\frac{14}{17}$

g. $\frac{77}{8}$
$9\frac{5}{8}$

h. $\frac{104}{15}$
$6\frac{14}{15}$

i. $\frac{41}{12}$
$3\frac{5}{12}$

j. $\frac{65}{4}$
$16\frac{1}{4}$

k. $\frac{212}{10}$
$21\frac{2}{10} = 21\frac{1}{5}$

l. $\frac{502}{4}$
$125\frac{2}{4} = 125\frac{1}{2}$

2. Write each fraction as an improper fraction.

a. $1\frac{1}{2}$
$\frac{3}{2}$

b. $6\frac{1}{3}$
$\frac{19}{3}$

c. $5\frac{2}{7}$
$\frac{37}{7}$

d. $2\frac{5}{8}$
$\frac{21}{8}$

e. $9\frac{2}{3}$
$\frac{29}{3}$

f. $1\frac{9}{14}$
$\frac{23}{14}$

g. $4\frac{7}{9}$
$\frac{43}{9}$

h. $3\frac{5}{11}$
$\frac{38}{11}$

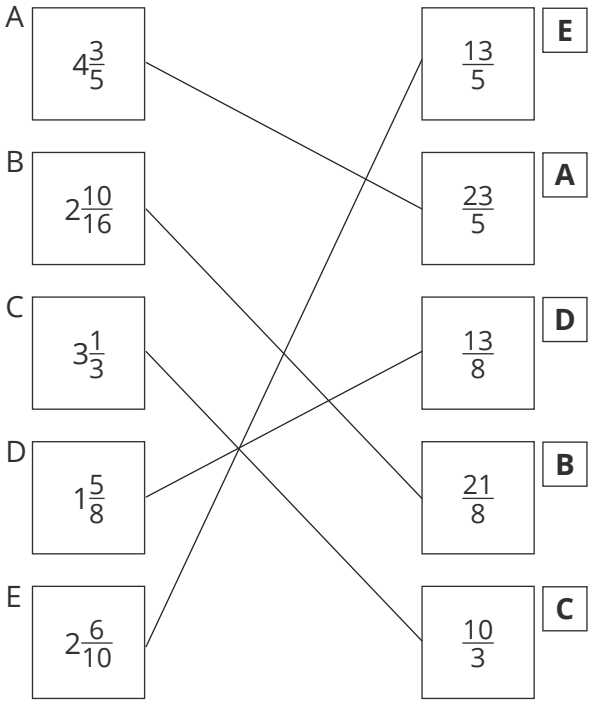
i. $12\frac{1}{4}$
$\frac{49}{4}$

j. $1\frac{4}{25}$
$\frac{29}{25}$

k. $7\frac{2}{13}$
$\frac{93}{13}$

l. $4\frac{5}{17}$
$\frac{73}{17}$

3. Match the improper fraction to its equivalent mixed number fraction.



Challenge

Write a mixed number fraction between $\frac{27}{5}$ and $5\frac{1}{5}$.

$5\frac{1}{5} = \frac{26}{5}$

$\frac{27}{5} = \frac{54}{10}$ and $\frac{26}{5} = \frac{52}{10}$

$\frac{53}{10} = 5\frac{3}{10}$.

Or any correct mixed number fraction between $\frac{108}{20}$ and $\frac{104}{20}$ or between $\frac{162}{30}$ and $\frac{156}{30}$, etc.

Converting Between Mixed Number and Improper Fractions

Prior Knowledge:

- Writing fractions in their simplest form.
- Division with remainders.

In a fraction, the denominator (the bottom part) tells you how many equal parts there are in a whole and the numerator (top part) tells you how many parts you have.

A **proper** fraction contains a numerator which is **less than** the denominator. For example, $\frac{1}{5}$.

An **improper** fraction (also referred to as a top-heavy fraction) contains a numerator which is **larger** than or **equal to** the denominator. For example, $\frac{4}{4}$ or $\frac{5}{3}$.

A **mixed number** fraction contains a whole number and a proper fraction. For example, $5\frac{1}{6}$.

Converting an Improper Fraction to a Mixed Number Fraction

Step 1: Divide the numerator by the denominator.

Step 2: Write down the whole number.

Step 3: Write the remainder as the numerator of the new fraction. The denominator will usually stay the same; always check the question to see if you've been asked to write the answer in its simplest form.

Example

Write $\frac{9}{4}$ as a mixed number fraction.

Start by dividing the numerator by the denominator, writing down the whole number and its remainder.

9 ÷ 4 = **2** with a remainder of **1**.

Now, write as a fraction: $2\frac{1}{4}$

Converting a Mixed Number Fraction to an Improper Fraction

Step 1: Multiply the whole number by the denominator.

Step 2: Add this to the numerator.

Step 3: Write this answer as the new numerator. The denominator stays the same.

Example

Write $3\frac{4}{7}$ as an improper fraction.

Start by multiplying the whole number by the denominator. **3 × 7 = 21**

Add this to the numerator. **21 + 4 = 25**

Write this answer as the new numerator, keeping the same denominator.

$3\frac{4}{7} = \frac{25}{7}$

Your Turn

1. Write each fraction as a mixed number fraction, in its simplest form.

a. $\frac{12}{5}$

b. $\frac{8}{3}$

c. $\frac{15}{6}$

d. $\frac{4}{3}$

e. $\frac{20}{9}$

f. $\frac{31}{17}$

g. $\frac{77}{8}$

h. $\frac{104}{15}$

i. $\frac{41}{12}$

j. $\frac{65}{4}$

k. $\frac{212}{10}$

l. $\frac{502}{4}$

2. Write each fraction as an improper fraction.

a. $1\frac{1}{2}$

b. $6\frac{1}{3}$

c. $5\frac{2}{7}$

d. $2\frac{5}{8}$

e. $9\frac{2}{3}$

f. $1\frac{9}{14}$

g. $4\frac{7}{9}$

h. $3\frac{5}{11}$

i. $12\frac{1}{4}$

j. $1\frac{4}{25}$

k. $7\frac{2}{13}$

l. $4\frac{5}{17}$

3. Match the improper fraction to its equivalent mixed number fraction.

A	$4\frac{3}{5}$	$\frac{13}{5}$	☐
B	$2\frac{10}{16}$	$\frac{23}{5}$	☐
C	$3\frac{1}{3}$	$\frac{13}{8}$	☐
D	$1\frac{5}{8}$	$\frac{21}{8}$	☐
E	$2\frac{6}{10}$	$\frac{10}{3}$	☐

Challenge

Write a mixed number fraction between $\frac{27}{5}$ and $5\frac{1}{5}$.

Converting Between Mixed Number and Improper Fractions

Prior Knowledge:

- Writing fractions in their simplest form.
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Converting an Improper Fraction to a Mixed Number Fraction

Step 1: Divide the numerator by the denominator.

Step 2: Write down the whole number.

Step 3: Write the remainder as the numerator of the new fraction. The denominator will usually stay the same; always check the question to see if you've been asked to write the answer in its simplest form.

Example

Write $\frac{9}{4}$ as a mixed number fraction.

Start by dividing the numerator by the denominator, writing down the whole number and its remainder.

9 ÷ 4 = **2** with a remainder of **1**.

Now, write as a fraction: $2\frac{1}{4}$

Converting a Mixed Number Fraction to an Improper Fraction

Step 1: Multiply the whole number by the denominator.

Step 2: Add this to the numerator.

Step 3: Write this answer as the new numerator. The denominator stays the same.

Example

Write $3\frac{4}{7}$ as an improper fraction.

Start by multiplying the whole number by the denominator. **3 × 7 = 21**

Add this to the numerator. **21 + 4 = 25**

Write this answer as the new numerator, keeping the same denominator.

$3\frac{4}{7} = \frac{25}{7}$

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1. Write each fraction as a mixed number fraction, in its simplest form.

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b. $\frac{8}{3}$ _____

c. $\frac{15}{6}$ _____

d. $\frac{4}{3}$ _____

e. $\frac{20}{9}$ _____

f. $\frac{31}{17}$ _____

g. $\frac{77}{8}$ _____

h. $\frac{104}{15}$ _____

i. $\frac{41}{12}$ _____

j. $\frac{65}{4}$ _____

k. $\frac{212}{10}$ _____

l. $\frac{502}{4}$ _____

2. Write each fraction as an improper fraction.

a. $1\frac{1}{2}$ _____

b. $6\frac{1}{3}$ _____

c. $5\frac{2}{7}$ _____

d. $2\frac{5}{8}$ _____

e. $9\frac{2}{3}$ _____

f. $1\frac{9}{14}$ _____

g. $4\frac{7}{9}$ _____

h. $3\frac{5}{11}$ _____

i. $12\frac{1}{4}$ _____

j. $1\frac{4}{25}$ _____

k. $7\frac{2}{13}$ _____

l. $4\frac{5}{17}$ _____

3. Match the improper fraction to its equivalent mixed number fraction.

A	$4\frac{3}{5}$	$\frac{13}{5}$	☐
B	$2\frac{10}{16}$	$\frac{23}{5}$	☐
C	$3\frac{1}{3}$	$\frac{13}{8}$	☐
D	$1\frac{5}{8}$	$\frac{21}{8}$	☐
E	$2\frac{6}{10}$	$\frac{10}{3}$	☐

Challenge

Write a mixed number fraction between $\frac{27}{5}$ and $5\frac{1}{5}$.