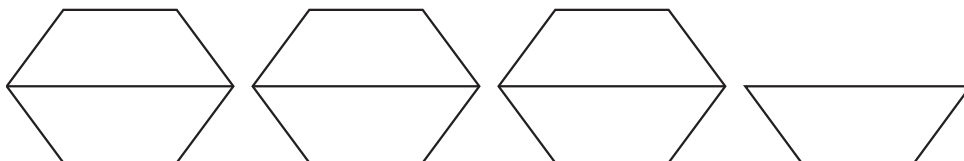


Mixed Numbers



Quick Review

Tyla arranged 7 trapezoids.



Her arrangement shows 7 halves of a hexagon: $\frac{7}{2}$

It also shows 3 whole hexagons plus 1 half: $3\frac{1}{2}$

$\frac{7}{2}$ and $3\frac{1}{2}$ represent the same amount.

They are equivalent. $\frac{7}{2} = 3\frac{1}{2}$

An **improper fraction** shows an amount greater than 1 whole.

$\frac{7}{2}$ is an improper fraction.

A **mixed number** has a whole number part and a fraction part.

$3\frac{1}{2}$ is a mixed number.

Try These

1. Write an improper fraction and a mixed number for each picture.

a) _____

b) _____

c) _____

Practice

1. Draw pictures to show each improper fraction.
Write the mixed number.

$\frac{5}{2}$ _____	$\frac{7}{3}$ _____
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2. Draw pictures to show each mixed number.
Write the improper fraction.

$4\frac{1}{4}$ _____	$2\frac{6}{8}$ _____
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3. Sofia took piano lessons for 18 months.
How many years is that? Show your work.

Stretch Your Thinking

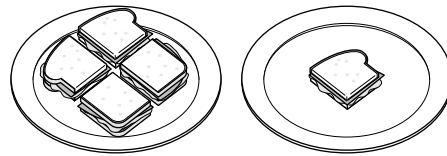
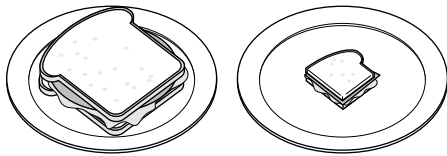
Henry drank 4 glasses of juice. Ethan drank $\frac{9}{2}$ glasses of juice.
Who drank more juice? Explain how you know.

Converting between Mixed Numbers and Improper Fractions



Quick Review

- ▶ These plates have $1\frac{1}{4}$ sandwiches. These plates have $\frac{5}{4}$ sandwiches.



$1\frac{1}{4}$ and $\frac{5}{4}$ represent the same amount.

$1\frac{1}{4}$ is a **mixed number**.

$\frac{5}{4}$ is an **improper fraction**.

- ▶ To write $2\frac{7}{8}$ as an improper fraction, multiply the whole number by the denominator and add the numerator.

$$\begin{aligned} 2 \times 8 &= 16 \\ 16 + 7 &= 23 \\ \text{So, } \frac{23}{8} &= 2\frac{7}{8} \end{aligned}$$

- ▶ To write $\frac{13}{2}$ as a mixed number, divide the numerator by the denominator.

$$\begin{aligned} 13 \div 2 &= 6 \text{ R}1 \\ \text{So, } 6\frac{1}{2} &= \frac{13}{2} \end{aligned}$$

Try These

1. Write each mixed number as an improper fraction.

a) $3\frac{7}{9} = \underline{\hspace{2cm}}$ b) $4\frac{3}{4} = \underline{\hspace{2cm}}$ c) $7\frac{6}{11} = \underline{\hspace{2cm}}$ d) $1\frac{19}{20} = \underline{\hspace{2cm}}$

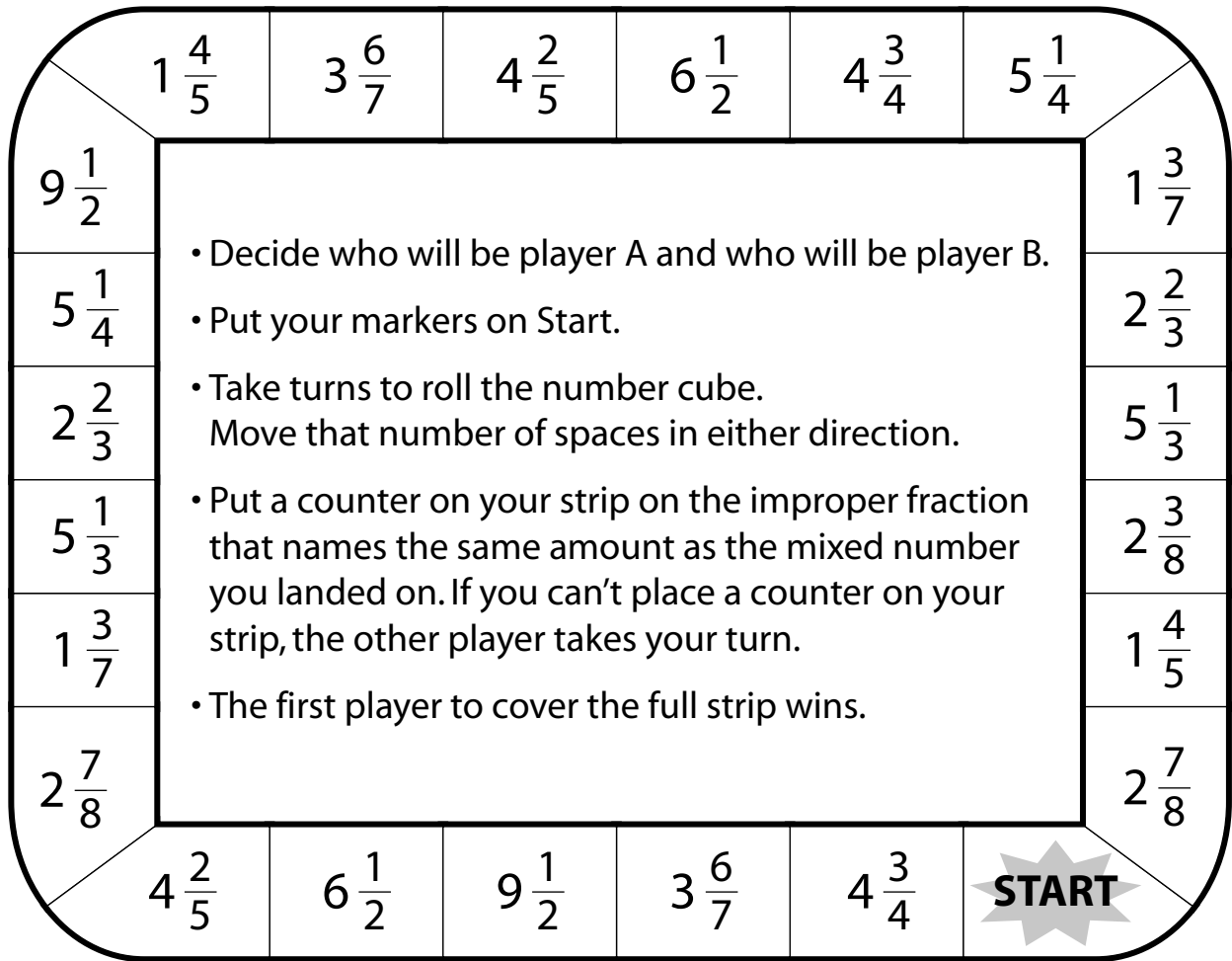
2. Write each improper fraction as a mixed number.

a) $\frac{8}{5} = \underline{\hspace{2cm}}$ b) $\frac{39}{7} = \underline{\hspace{2cm}}$ c) $\frac{48}{9} = \underline{\hspace{2cm}}$ d) $\frac{16}{3} = \underline{\hspace{2cm}}$

Practice

Play this game with a partner.

You will need 1 number cube, 2 game markers, and 24 small counters.



Player A	$\frac{22}{5}$	$\frac{8}{3}$	$\frac{13}{2}$	$\frac{16}{3}$	$\frac{9}{5}$	$\frac{19}{4}$	$\frac{19}{2}$	$\frac{27}{7}$	$\frac{19}{8}$	$\frac{21}{4}$	$\frac{23}{8}$	$\frac{10}{7}$
Player B	$\frac{22}{5}$	$\frac{8}{3}$	$\frac{13}{2}$	$\frac{16}{3}$	$\frac{9}{5}$	$\frac{19}{4}$	$\frac{19}{2}$	$\frac{27}{7}$	$\frac{19}{8}$	$\frac{21}{4}$	$\frac{23}{8}$	$\frac{10}{7}$

Stretch Your Thinking

Sadie says she has $\frac{7}{4}$ dollars. How much money does she have? Explain.

Comparing Mixed Numbers and Improper Fractions

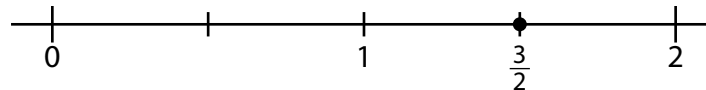
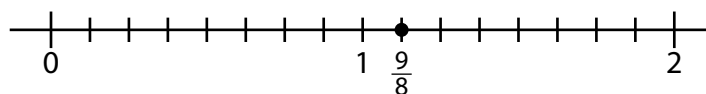
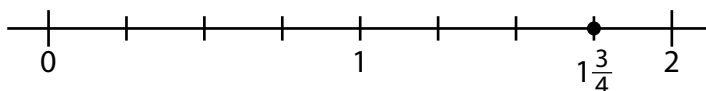


Quick Review

You can compare and order mixed numbers and improper fractions.

- Order $1\frac{3}{4}$, $\frac{9}{8}$, and $\frac{3}{2}$ from least to greatest.

Use number lines of equal length.



The order from least to greatest is $\frac{9}{8}$, $\frac{3}{2}$, $1\frac{3}{4}$.

- Compare $3\frac{3}{4}$ and $\frac{17}{12}$.

Write $3\frac{3}{4}$ as an improper fraction: $\frac{15}{4}$

Write $\frac{15}{4}$ as an equivalent fraction with denominator 12:

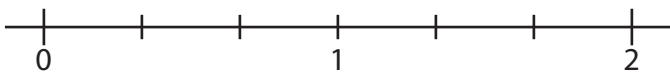
$$\frac{15}{4} = \frac{45}{12}$$

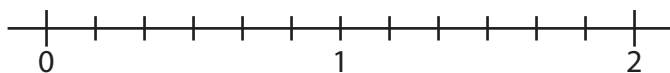
Compare $\frac{45}{12}$ and $\frac{17}{12}$: $\frac{45}{12} > \frac{17}{12}$

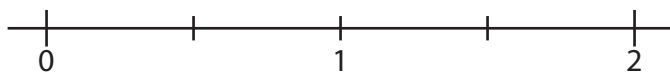
So, $3\frac{3}{4} > \frac{17}{12}$

Try These

- Use these number lines to order $\frac{5}{3}$, $1\frac{1}{6}$, and $\frac{3}{2}$ from least to greatest.







- Write $>$, $<$, or $=$.

a) $1\frac{7}{8}$ _____ $\frac{7}{4}$

b) $\frac{21}{5}$ _____ $4\frac{1}{5}$

c) $\frac{13}{4}$ _____ $3\frac{5}{6}$

Practice

1. Write $>$, $<$, or $=$.

a) $\frac{11}{7}$ _____ $\frac{10}{9}$

b) $\frac{21}{8}$ _____ $\frac{31}{12}$

c) $\frac{17}{7}$ _____ $2\frac{3}{4}$

d) $1\frac{1}{2}$ _____ $\frac{24}{16}$

e) $\frac{24}{5}$ _____ $\frac{48}{10}$

f) $3\frac{4}{5}$ _____ $\frac{78}{25}$

2. Use a mixed number to complete each question.

a) $\frac{9}{4} =$ _____

b) $\frac{19}{11} >$ _____

c) $\frac{25}{12} <$ _____

d) $\frac{41}{3} <$ _____

e) $\frac{30}{10} <$ _____

f) $\frac{14}{3} >$ _____

3. Order the numbers in each set from greatest to least.

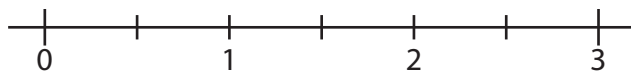
a) $\frac{8}{3}, 1\frac{11}{12}, \frac{7}{4}$ _____

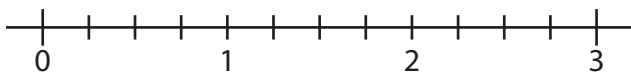
b) $\frac{10}{6}, \frac{8}{8}, 1\frac{1}{3}$ _____

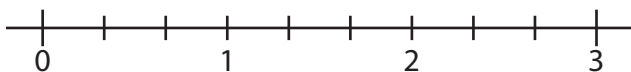
c) $\frac{9}{5}, \frac{11}{10}, 1\frac{7}{20}$ _____

d) $2\frac{8}{12}, \frac{13}{6}, \frac{9}{8}$ _____

4. Use these number lines to order $\frac{5}{2}$, $2\frac{1}{4}$, and $\frac{6}{3}$ from greatest to least.







5. Write each time period as a mixed number and as an improper fraction.

a) 3 h 30 min: _____ h; _____ h

b) 1 h 20 min: _____ h; _____ h

c) 2 h 45 min: _____ h; _____ h

d) 7 h 10 min: _____ h; _____ h

Stretch Your Thinking

Jeremiah thinks $27\frac{8}{9}$ is equivalent to $\frac{251}{8}$. Is he correct?

Explain how you know.
