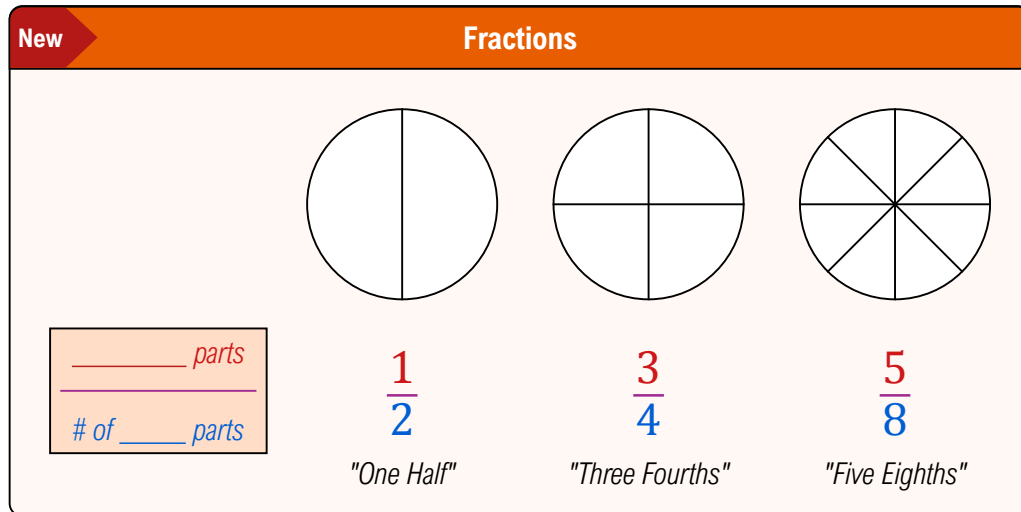


TOPIC: INTRO TO FRACTIONS & MIXED NUMBERS

Visualizing Fractions

◆ A *fraction* represents part of a whole & has a **numerator**, **denominator**, and **fraction bar**: $\frac{a}{b} = \div$, $b \neq _$.

► You can visualize fractions by determining how many _____ (**numerator**) of a whole (**denominator**) you have.



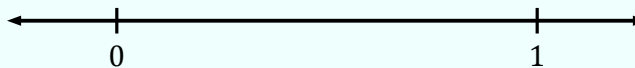
◆ You can visualize fractions on a number line by dividing the distance from _____ to _____ into **equal parts**.

EXAMPLE

Plot each of the fractions on the number line below.

(A) $\frac{1}{4}$

(B) $\frac{3}{4}$

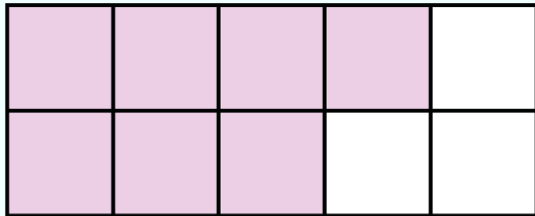


TOPIC: INTRO TO FRACTIONS & MIXED NUMBERS

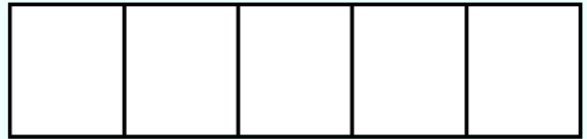
EXAMPLE

What fractions are indicated by each shaded part of the given illustration?

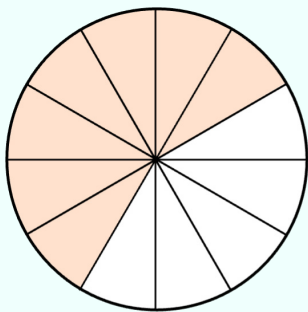
(A)



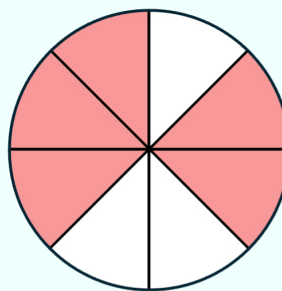
(B)



(C)



(D)



PRACTICE

Determine the **numerator** of the fraction below:

$$\frac{4}{5}$$

PRACTICE

Determine the **denominators** of each fraction below:

(A)

$$\frac{6}{-17}$$

(B)

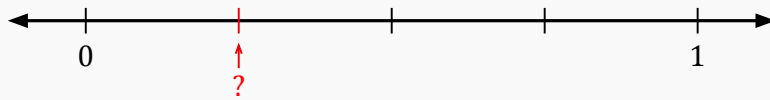
$$\frac{1200}{4563}$$

TOPIC: INTRO TO FRACTIONS & MIXED NUMBERS

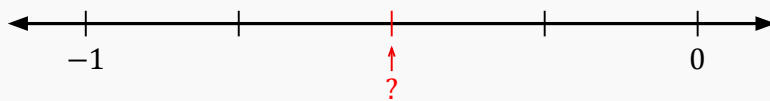
PRACTICE

What fraction would represent the indicated value on the number line?

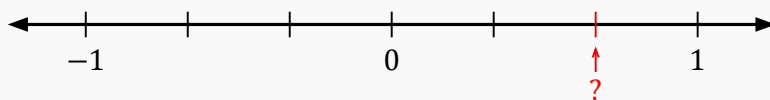
(A)



(B)

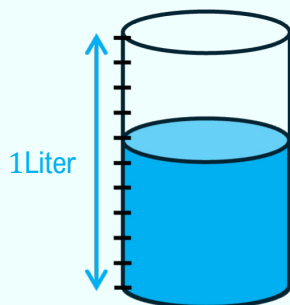


(C)



EXAMPLE

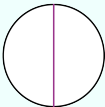
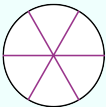
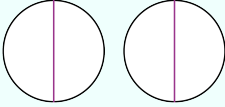
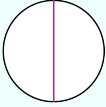
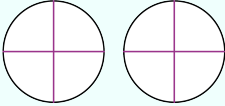
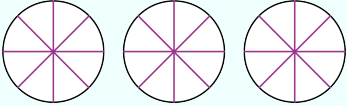
Write a fraction to represent the amount of water in the container below.



TOPIC: INTRO TO FRACTIONS & MIXED NUMBERS

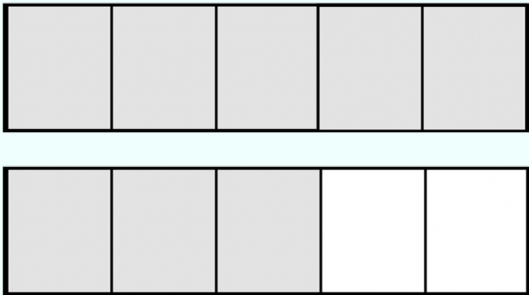
Types of Fractions

♦ Fractions can be proper, improper, or mixed.

Fraction	Definition	Example
<i>Proper</i>	numerator denominator: Value is 1	$\frac{1}{2}$  $\frac{4}{6}$ 
<i>Improper</i>	numerator denominator: Value is 1	$\frac{3}{2}$  $\frac{2}{2}$ 
<i>Mixed</i>	whole number <i>proper fraction</i>	$1\frac{1}{4}$  $2\frac{7}{8}$ 

EXAMPLE

What fraction is indicated by the shaded part of the given illustration?



EXAMPLE

Determine which of the following fractions below is equal to $-\frac{3}{4}$. Select all that apply.

$\frac{4}{3}$
 $-\frac{4}{3}$
 $\frac{-3}{4}$
 $\frac{-3}{-4}$
 $\frac{3}{-4}$

TOPIC: INTRO TO FRACTIONS & MIXED NUMBERS

PRACTICE

Determine if the following is a *proper fraction*, *improper fraction*, or *mixed number*.

(A)

$$\frac{5}{7}$$

(B)

$$\frac{13}{13}$$

(C)

$$-\frac{100}{17}$$

(D)

$$8\frac{4}{9}$$

PRACTICE

Determine the value of the following fractions.

(A)

$$\frac{0}{23}$$

(B)

$$\frac{-37}{-37}$$

(C)

$$\frac{5}{1}$$

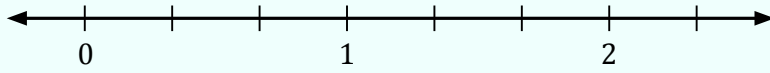
(D)

$$\frac{14}{0}$$

TOPIC: INTRO TO FRACTIONS & MIXED NUMBERS

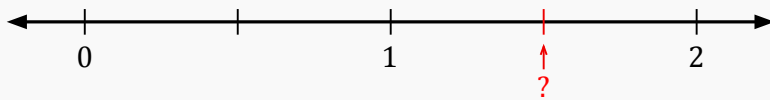
EXAMPLE

Represent the improper fraction $\frac{4}{3}$ on the number line below.



PRACTICE

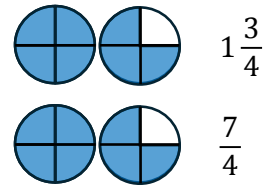
Represent the indicated position on the number line using an improper fraction.



TOPIC: INTRO TO FRACTIONS & MIXED NUMBERS

Rewriting Improper and Mixed Numbers

◆ Recall: Improper fractions and mixed numbers can represent the same value.



Mixed Number → Improper Fraction	Improper Fraction → Mixed Number
$1\frac{3}{4}$ 1) Multiply whole number by denominator 2) Add to numerator 3) Put result over original denominator	$\frac{7}{4}$ 1) Divide numerator by denominator divisor $\overline{) }$ quotient remainder 2) Rewrite as quotient $\frac{\text{remainder}}{\text{divisor}}$

TOPIC: INTRO TO FRACTIONS & MIXED NUMBERS

PRACTICE

Convert the following mixed number to a fraction.

(A) $4\frac{2}{3}$

(B) $6\frac{1}{4}$

PRACTICE

Convert the following fraction to a mixed number.

(A) $\frac{43}{9}$

(B) $\frac{-29}{6}$

TOPIC: INTRO TO FRACTIONS & MIXED NUMBERS**TOPIC RESOURCE: DIVISION RULE REVIEW**

◆ Recall: Since a fraction bar indicates division, properties of division apply to fractions.

DIVISION PROPERTIES			
Name	Description	Rule	Example
1 Properties	Any non-zero number divided by itself is 1 .	$\frac{a}{a} = 1$	$\frac{5}{5} = 1$
	Any number divided by 1 is that same number.	$\frac{a}{1} = a$	$\frac{5}{1} = 5$
0 Properties	Zero divided by any number is zero .	$\frac{0}{a} = 0$	$\frac{0}{5} = 0$
	Any number divided by zero is undefined .	$\frac{a}{0}$ is undefined	$\frac{5}{0} = \text{undefined}$
Negative Properties	The quotient of two negative numbers is a positive number .	$\frac{-a}{-b} = \frac{a}{b}$	$\frac{-1}{-5} = \frac{1}{5}$
	The quotient of two numbers w/ opposite signs is a negative number .*	$-\frac{a}{b} = \frac{-a}{b} = \frac{a}{-b}$	$-\frac{1}{5} = \frac{-1}{5} = \frac{1}{-5}$

◆ *Note: A negative fraction can be written with the negative sign in the *numerator*, *denominator*, or *out in front*.