

UNDERSTANDING FRACTIONS

LEARNING FRACTIONS – MADE EASY!

- Drawing Fractions
- Comparing Fractions
- Number Lines
- Shading Shapes

- Matching Models
- Real-Life Math
- Word Problems
- Practice Problems

Let's Practice Fractions

Directions

For each shape below:
 1. Count the shaded parts
 2. Count the total equal parts
 3. Write the fraction (shaded over total parts)

Example



Three parts are shaded
 Four parts are present

$\frac{3}{4}$

1.



___ parts are shaded
 ___ parts are present

2.



___ parts are shaded
 ___ parts are present

3.



___ parts are shaded
 ___ parts are present

4.



___ parts are shaded
 ___ parts are present

Mixed Practice

Directions

Complete each activity: mark, shade, draw, or write the correct fraction.

A. Mark $\frac{3}{8}$ on the number line

$\frac{3}{8}$



B. Write the fraction



C. Draw the fraction on the number line



D. Shade $\frac{3}{4}$ onto the shape

$\frac{3}{4}$

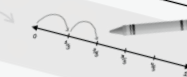
E. Write the fraction

Number Line Practice

Directions

Start at 0 and jump forward. Count the jumps and mark where you land.

Jumps out of 5



Jumps out of 4



Jumps out of 6



Jumps out of 5



Jumps out of 4



Jumps out of 6



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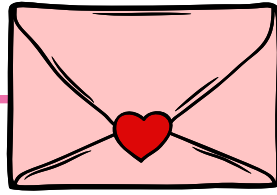
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GAUSS Mathematics

gaussmathematics05@gmail.com

Empowering learners with visual, accessible math.



Dear Learner, Parent, or Educator,

Welcome to Understanding Fractions!

This workbook was created with love, patience, and purpose—to make learning fractions fun, friendly, and truly understandable for every child.

Whether you're a student working at your own pace, a parent supporting your child's journey, or a teacher guiding young learners, this book is designed to meet you where you are. Through simple language, colorful visuals, and hands-on practice, we'll break down tricky concepts into steps that make sense.

At GAUSS Mathematics, we believe that everyone deserves access to math that's clear, engaging, and empowering. You'll find pages for drawing, comparing, solving, and exploring—plus space to make mistakes, try again, and grow.

This is more than just a workbook—it's a tool for building confidence, curiosity, and a strong foundation in math.

So take a deep breath, grab your pencil, and let's dive into the world of fractions—together.

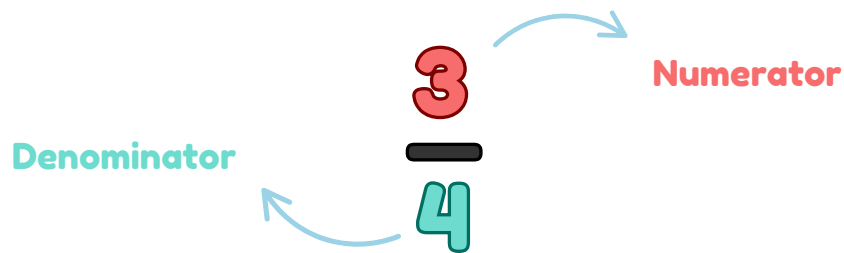
With encouragement,
GAUSS Mathematics

Fractions: Parts of a Whole

What are fractions?

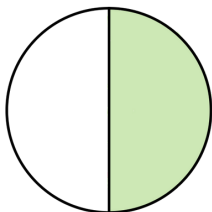
Fractions show parts of a whole. It has two numbers:

- The top number (**numerator**) shows you how many parts you have.
- The bottom number (**denominator**) shows you how many equal parts the whole is split into.



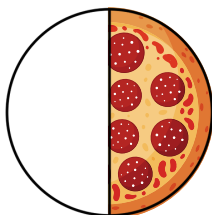
Example

The fraction $\frac{1}{2}$ represents one out of two equal parts. In other words, it is **one half**.



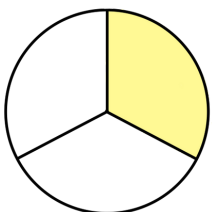
One part out of two
parts is shaded

$$\frac{1}{2}$$



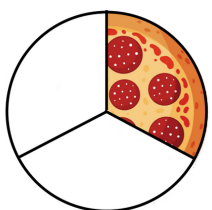
One half of the
pizza is present

$$\frac{1}{2}$$



One part out of
three parts is
shaded

$$\frac{1}{3}$$



One third of the
pizza is present

$$\frac{1}{3}$$

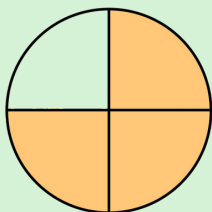
Let's Practice Fractions

Directions

For each shape below:

1. **Count** the shaded parts.
2. **Count** the total equal parts.
3. **Write** the fraction (shaded over total parts).

Example

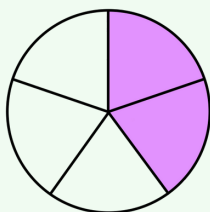


Three parts are shaded

Four parts are present

$\frac{3}{4}$

1.



___ parts are shaded

___ parts are present



2.

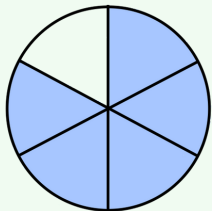


___ parts are shaded

___ parts are present



3.



___ parts are shaded

___ parts are present



4.

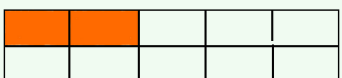


___ parts are shaded

___ parts are present



5.

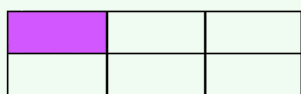


___ parts are shaded

___ parts are present



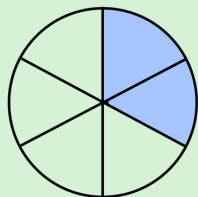
6.



____ parts are shaded
 ____ parts are present



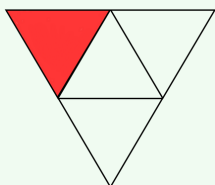
7.



____ parts are shaded
 ____ parts are present



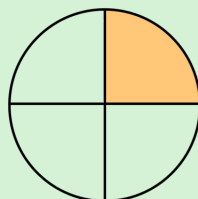
8.



____ parts are shaded
 ____ parts are present



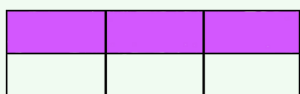
9.



____ parts are shaded
 ____ parts are present



10.



____ parts are shaded
 ____ parts are present



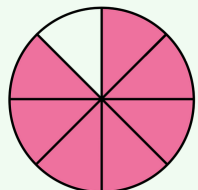
11.



____ parts are shaded
 ____ parts are present



12.



____ parts are shaded
 ____ parts are present



Let's Practice Fractions

Directions

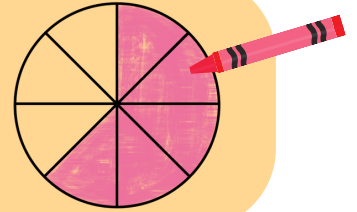
Look at each fraction.

1. **Color** each shape to match the fraction.
2. **Write** how many parts are shaded.
3. **Write** the total number of parts.

Example

$$\frac{5}{8}$$

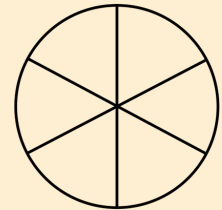
Five parts are shaded
Eight parts are present



1.

$$\frac{1}{6}$$

___ parts are shaded
___ parts are present



2.

$$\frac{3}{3}$$

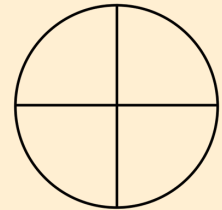
___ parts are shaded
___ parts are present



3.

$$\frac{2}{4}$$

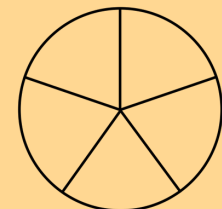
___ parts are shaded
___ parts are present



4.

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

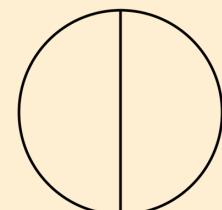
___ parts are shaded
___ parts are present



5.

$$\frac{1}{2}$$

___ parts are shaded
___ parts are present

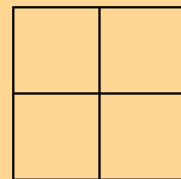


6.

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



___ parts are shaded
___ parts are present

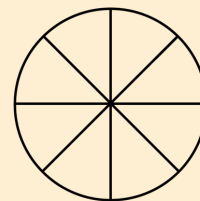


7.

$$\frac{7}{8}$$



___ parts are shaded
___ parts are present

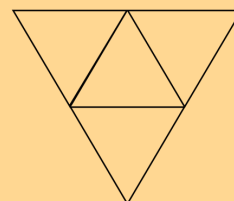


8.

$$\frac{2}{4}$$



___ parts are shaded
___ parts are present

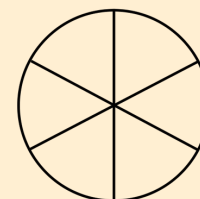


9.

$$\frac{3}{6}$$



___ parts are shaded
___ parts are present

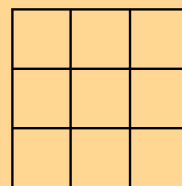


10.

$$\frac{3}{9}$$



___ parts are shaded
___ parts are present

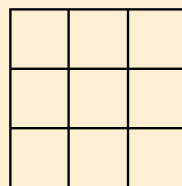


11.

$$\frac{7}{9}$$



___ parts are shaded
___ parts are present

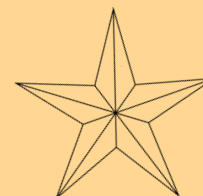


12.

$$\frac{10}{10}$$



___ parts are shaded
___ parts are present



Comparing Fractions

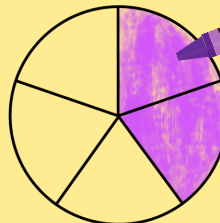
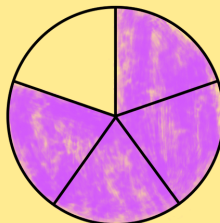
Directions

For each pair of shapes, decide which fraction is bigger. Color the shapes, count the shaded parts, and circle the correct answer.

Example



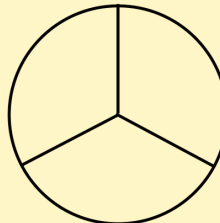
OR



1.



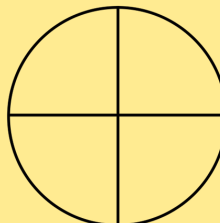
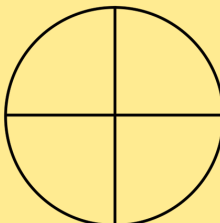
OR



2.



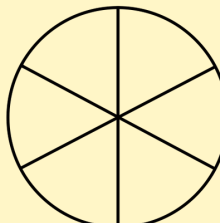
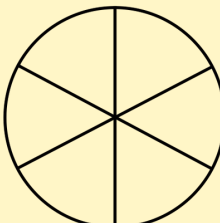
OR



3.



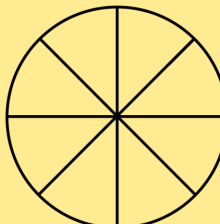
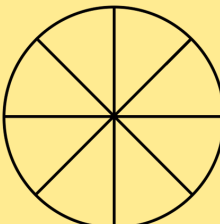
OR



4.



OR



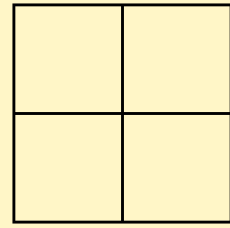
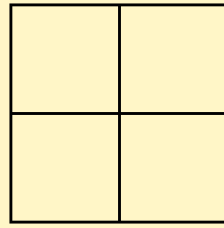
Circle the greater fraction.

1.

$$\frac{2}{4}$$

OR

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

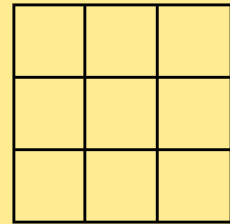
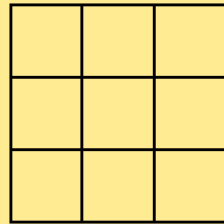


2.

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

OR

$$\frac{5}{9}$$

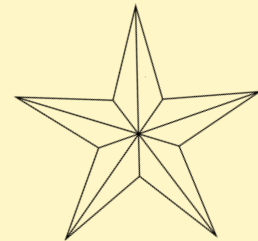
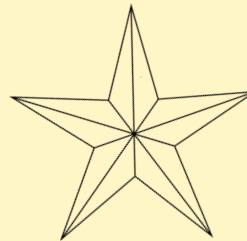


1.

$$\frac{3}{10}$$

OR

$$\frac{5}{10}$$

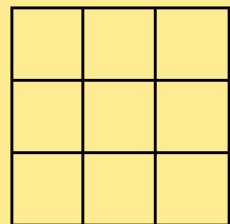
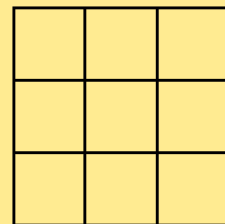


2.

$$\frac{7}{9}$$

OR

$$\frac{1}{9}$$

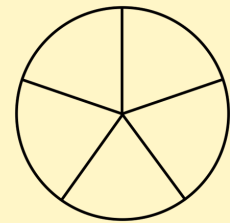
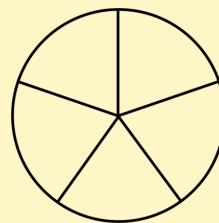


3.

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

OR

$$\frac{2}{5}$$

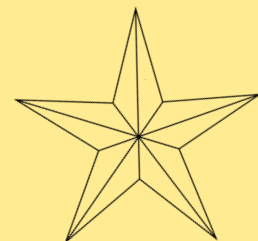
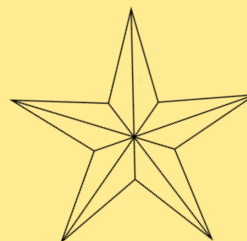


4.

$$\frac{6}{10}$$

OR

$$\frac{8}{10}$$



Comparing Fractions

Directions

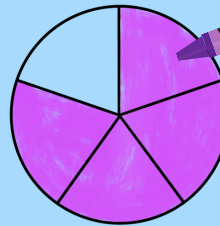
For each pair of shapes, decide which fraction is bigger. Color the shapes, count the shaded parts, and circle the correct answer.

Example

$$\frac{4}{6}$$

OR

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

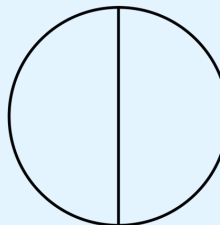


1.

$$\frac{1}{3}$$

OR

$$\frac{1}{2}$$

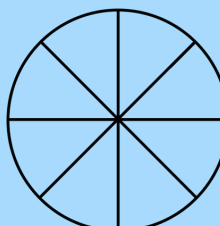
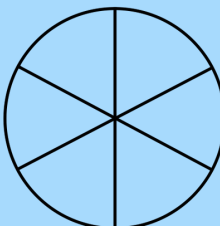


2.

$$\frac{6}{6}$$

OR

$$\frac{6}{8}$$

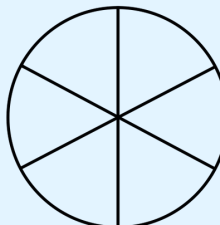
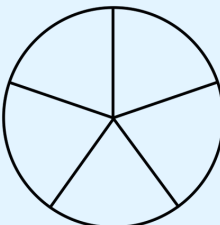


3.

$$\frac{3}{5}$$

OR

$$\frac{4}{6}$$

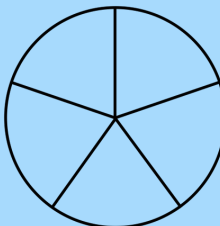
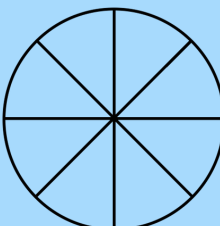


4.

$$\frac{5}{8}$$

OR

$$\frac{3}{5}$$



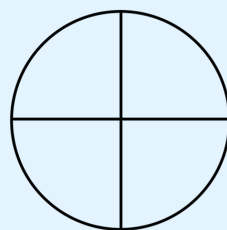
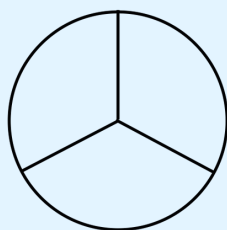
Circle the greater fraction.

5.

$$\frac{2}{3}$$

OR

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

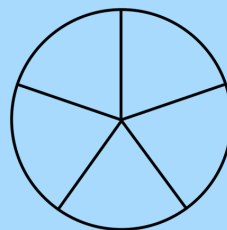
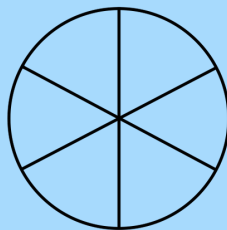


6.

$$\frac{5}{6}$$

OR

$$\frac{3}{5}$$

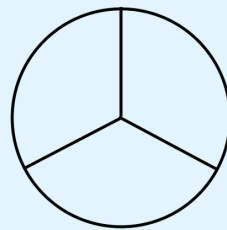
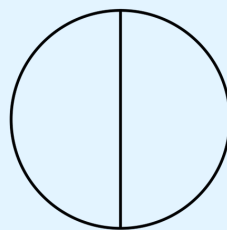


7.

$$\frac{1}{2}$$

OR

$$\frac{2}{3}$$

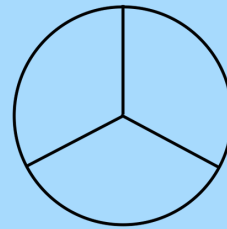
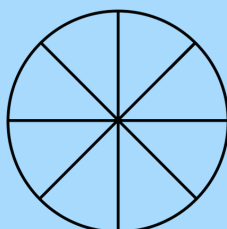


8.

$$\frac{5}{8}$$

OR

$$\frac{2}{3}$$

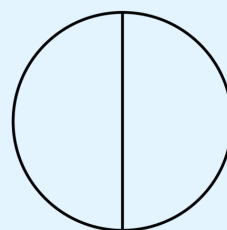
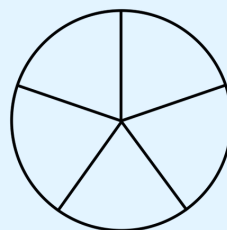


9.

$$\frac{3}{5}$$

OR

$$\frac{1}{2}$$

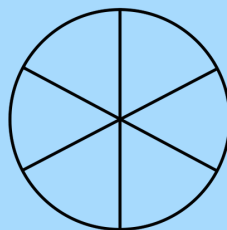
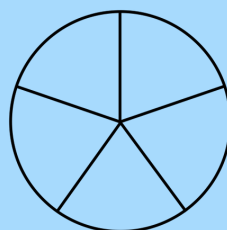


10.

$$\frac{2}{5}$$

OR

$$\frac{3}{6}$$



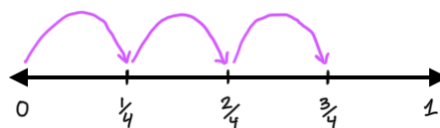
Fractions on a Number Line

Explanation

Fractions on a number line show how far you go. Just like the shapes, the number line is split into equal parts. The top number (**numerator**) tells how many parts you jump. The bottom number (**denominator**) tells how many parts there are in all.

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

Three parts are jumped
Four parts are present

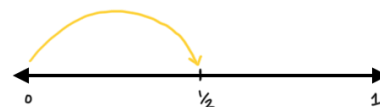


Example

The fraction $\frac{1}{2}$ represents one out of two. In other words, the arrow lands at the **halfway** point on the number line.

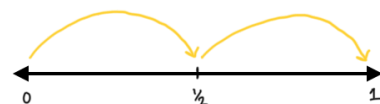
$$\frac{1}{2}$$

One part out of two
parts is jumped



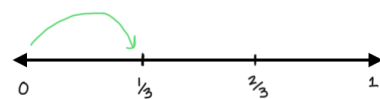
$$\frac{2}{2}$$

Two parts out of
two are jumped



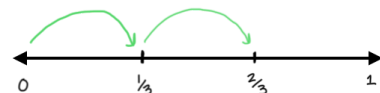
$$\frac{1}{3}$$

One part out of
three parts is
jumped.



$$\frac{2}{3}$$

Two parts out of
three are jumped.



Number Line Practice

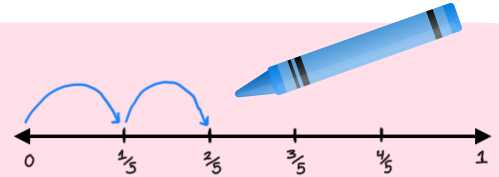
Directions

For each fraction below, start at 0 and jump forward. Count the jumps and mark where you land!

Example

$$\frac{2}{5}$$

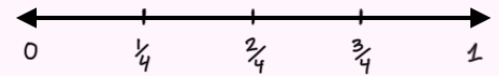
2 jumps out of 5



1.

$$\frac{2}{4}$$

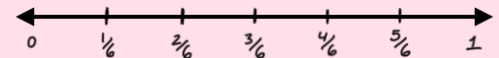
___ jumps out of 4



2.

$$\frac{3}{6}$$

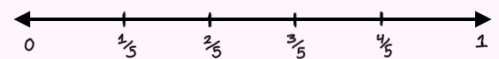
___ jumps out of 6



3.

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

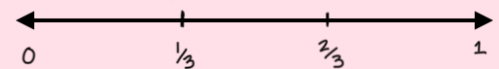
___ jumps out of 5



4.

$$\frac{3}{3}$$

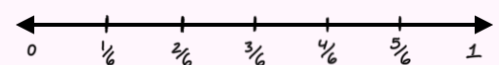
___ jumps out of 3



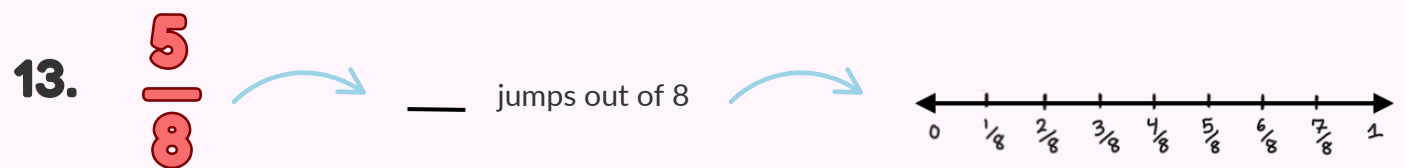
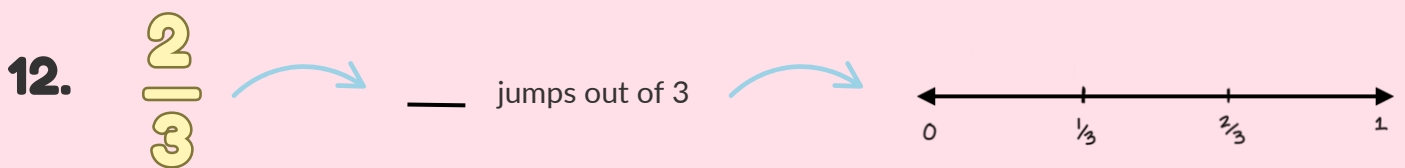
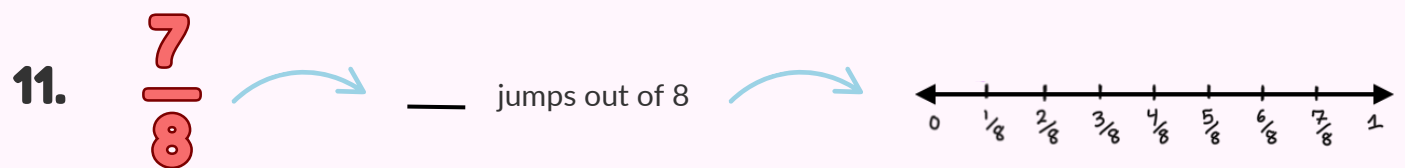
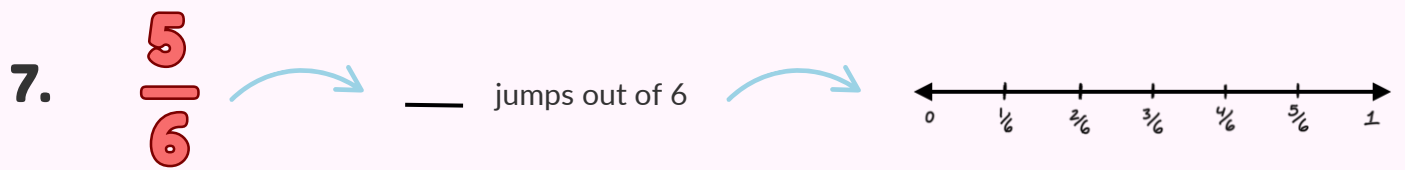
5.

$$\frac{1}{6}$$

___ jumps out of 6



Mark the fraction on the number line



Number Line Practice

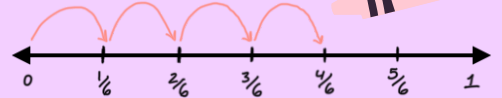
Directions

For each fraction below, start at 0 and jump forward. Write the fractions below the tick marks. Count the jumps and mark where you land!

Example

$$\frac{4}{6}$$

4 jumps out of 6



1.

$$\frac{3}{5}$$

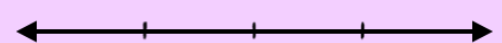
___ jumps out of ___



2.

$$\frac{1}{4}$$

___ jumps out of ___



3.

$$\frac{2}{3}$$

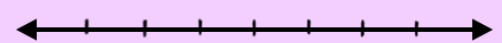
___ jumps out of ___



4.

$$\frac{2}{8}$$

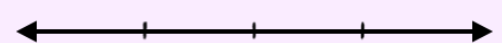
___ jumps out of ___



5.

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

___ jumps out of ___



Mark the fraction on the number line

6.

$$\frac{5}{8}$$



___ jumps out of ___

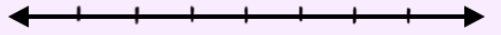


7.

$$\frac{6}{8}$$



___ jumps out of ___



8.

$$\frac{1}{3}$$



___ jumps out of ___

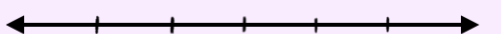


9.

$$\frac{5}{6}$$



___ jumps out of ___

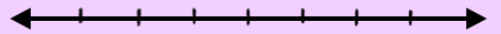


10.

$$\frac{3}{8}$$



___ jumps out of ___

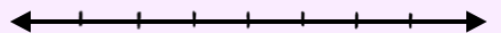


11.

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



___ jumps out of ___



12.

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



___ jumps out of ___



13.

$$\frac{2}{6}$$



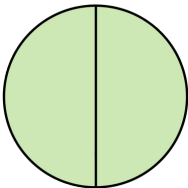
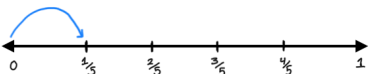

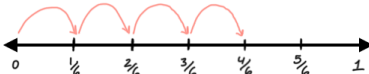
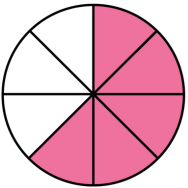
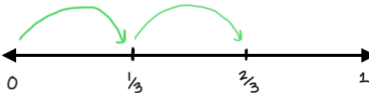
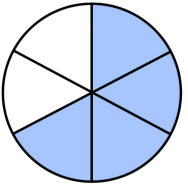
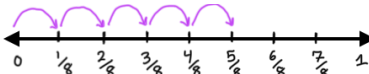
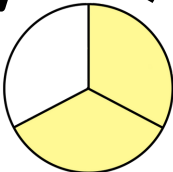
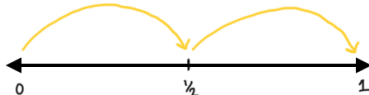
___ jumps out of ___

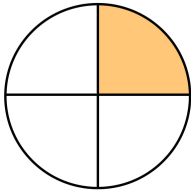
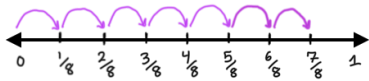
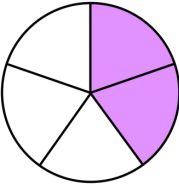

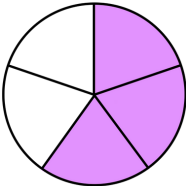
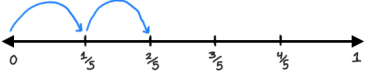
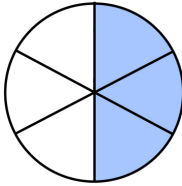
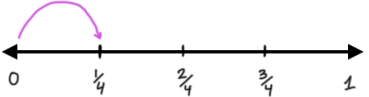
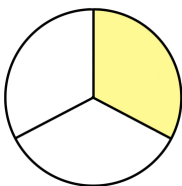
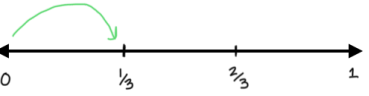
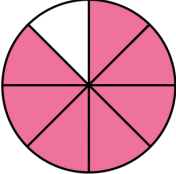
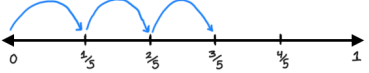


Match the Model

Directions

Match the shape, model, and number line that all show the same value. Use lines to connect each group.

Fraction	Visual Model	Number Line
$\frac{2}{3}$		
$\frac{2}{2}$		
$\frac{4}{6}$		
$\frac{1}{5}$		
$\frac{5}{8}$		

Fraction	Visual Model	Number Line
$\frac{3}{5}$		
$\frac{1}{4}$		
$\frac{3}{6}$		
$\frac{7}{8}$		
$\frac{1}{3}$		
$\frac{2}{5}$		

Draw Your Own Number Line

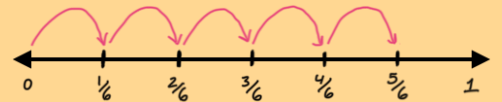
Directions

For each fraction, draw a number line from 0 to 1. Split it into equal parts and draw jumps. Mark where you land!

Example

$$\frac{5}{6}$$

Split into $\frac{5}{6}$ parts
Jump $\frac{1}{6}$ parts



1.

$$\frac{2}{3}$$

Split into ____ parts
Jump ____ parts



2.

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

Split into ____ parts
Jump ____ parts



3.

$$\frac{2}{7}$$

Split into ____ parts
Jump ____ parts



4.

$$\frac{1}{2}$$

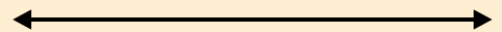
Split into ____ parts
Jump ____ parts



5.

$$\frac{6}{8}$$

Split into ____ parts
Jump ____ parts



Mark the fraction on the number line

6.

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



Split into ___ parts

Jump ___ parts



7.

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



Split into ___ parts

Jump ___ parts



8.

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



Split into ___ parts

Jump ___ parts



9.

$$\frac{7}{10}$$



Split into ___ parts

Jump ___ parts



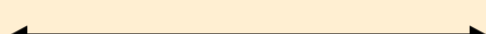
10.

$$\frac{3}{8}$$



Split into ___ parts

Jump ___ parts



11.

$$\frac{2}{9}$$



Split into ___ parts

Jump ___ parts



12.

$$\frac{1}{6}$$



Split into ___ parts

Jump ___ parts



13.

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



Split into ___ parts

Jump ___ parts

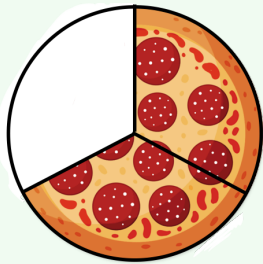


Real Life Fractions

Directions

Look at each picture, then write the fraction.

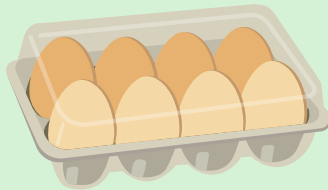
1.



___ slices are left
___ total slices



2.



___ eggs are white
___ total eggs



3.



___ parts are left
___ total parts



4.



___ parts are left
___ total parts



Write the Fraction

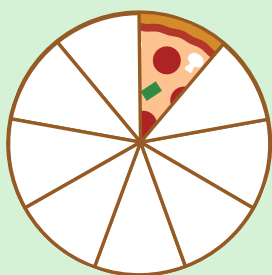
5.



___ donuts are pink
 ___ total donuts



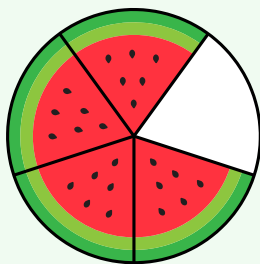
6.



___ slices are left
 ___ total slices



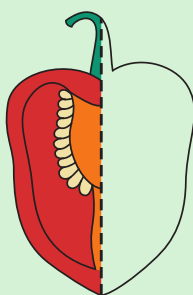
7.



___ parts are left
 ___ total parts



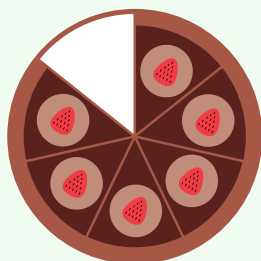
8.



___ parts are left
 ___ total parts



9.



___ parts are left
 ___ total parts



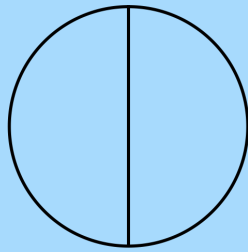
Who Ate More?

Directions

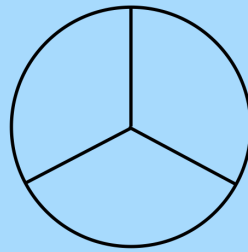
Read each word problem, shade each shape, and circle who ate more.

1.

Maria ate $\frac{1}{2}$ of a pizza. Leo ate $\frac{1}{3}$. Who ate more?



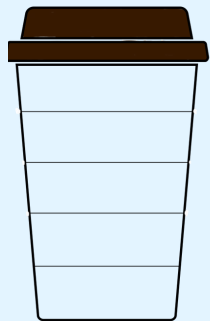
Maria



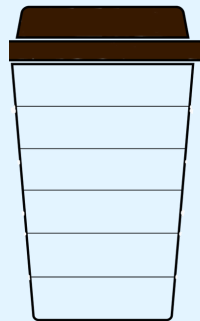
Leo

2.

Ethan drank $\frac{4}{5}$ of water from a cup. Benjamin drank $\frac{5}{6}$. Who drank more?



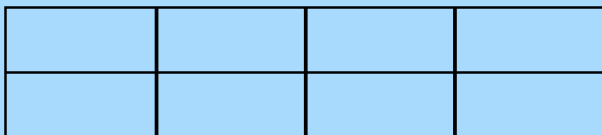
Ethan



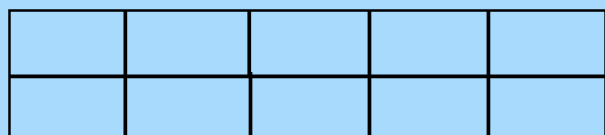
Benjamin

3.

Owen ate $\frac{6}{8}$ of a chocolate bar. Lia ate $\frac{5}{10}$. Who ate more?



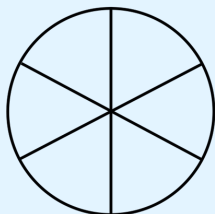
Owen



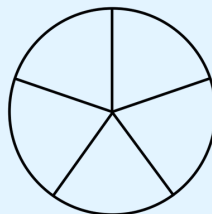
Lia

Circle the greater fraction.

5. Lily drank $\frac{5}{6}$ of her juice. Max drank $\frac{4}{5}$. Who drank more?



Lily



Max

6. Elena ran $\frac{3}{5}$ of a mile. Kai ran $\frac{2}{3}$. Who ran more?

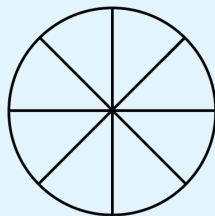


Elena

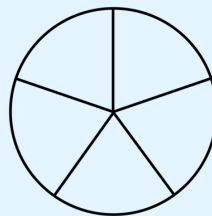


Kai

7. Henry read $\frac{6}{8}$ of a book. Sophia read $\frac{4}{5}$. Who read more?

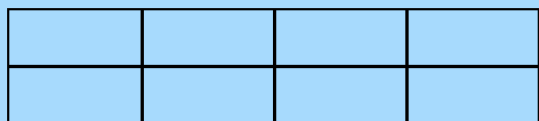


Henry



Sophia

8. Zara ate $\frac{6}{8}$ of her candy bar. Liam ate $\frac{4}{6}$. Who ate more?



Zara



Liam

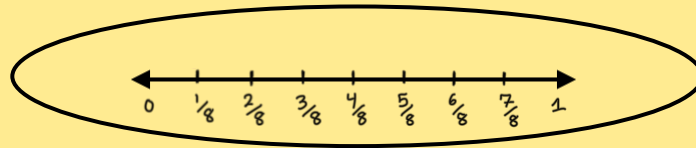
Mixed Practice

Directions

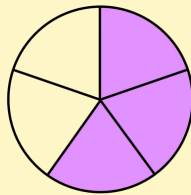
Complete each activity: mark, shade, draw, or write the correct fraction.

A. Mark $\frac{3}{8}$ on the number line

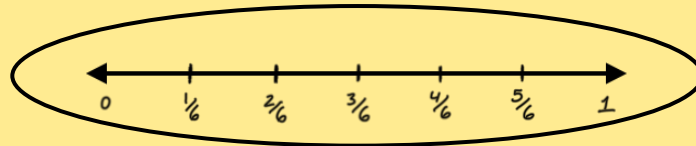
$$\frac{3}{8}$$



B. Write the fraction

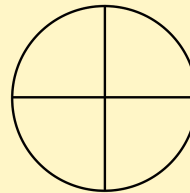


C. Draw the fraction on the number line

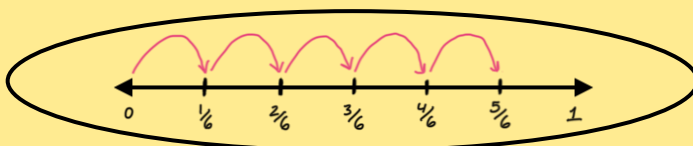


D. Shade $\frac{3}{4}$ onto the shape

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



E. Write the fraction

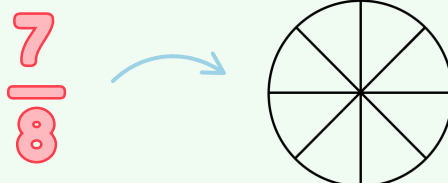


Mixed Practice

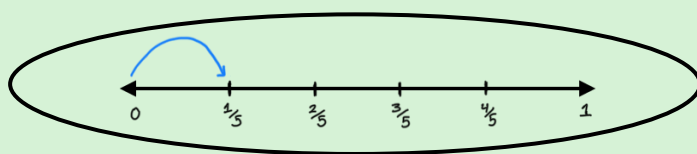
Directions

Complete each activity: mark, shade, draw, or write the correct fraction.

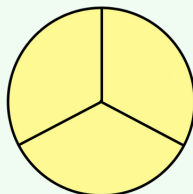
- A.** Shade $\frac{7}{8}$ onto the shape



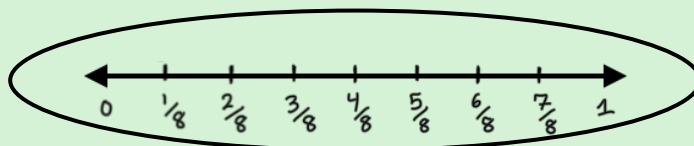
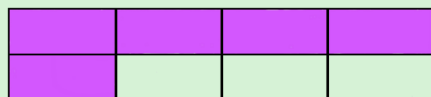
- B.** Write the fraction



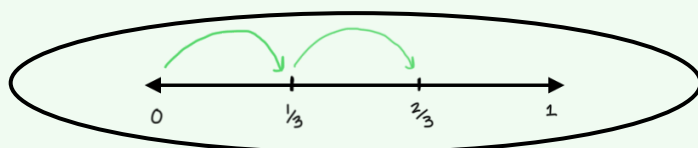
- C.** Write the fraction



- D.** Write the fraction on the number line



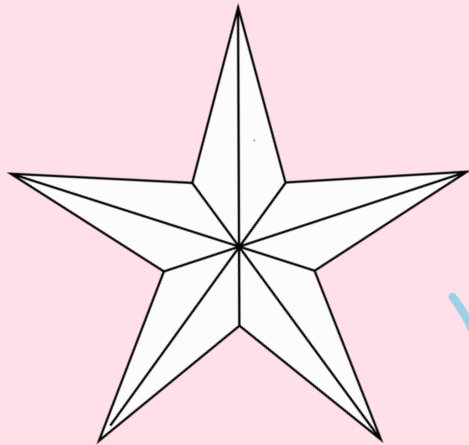
- E.** Write the fraction



Create Your Own Fraction

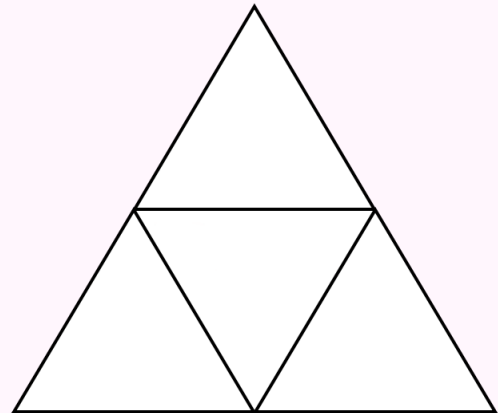
Directions

Shade part of each shape and write a fraction to show what you made!



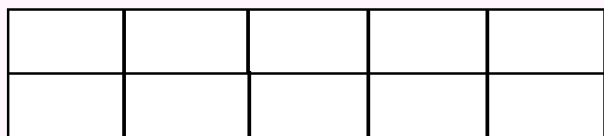
Fraction:

—



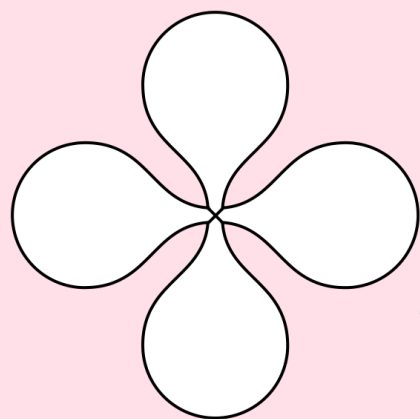
Fraction:

—



Fraction:

—



Fraction:

—

Real Life Fractions

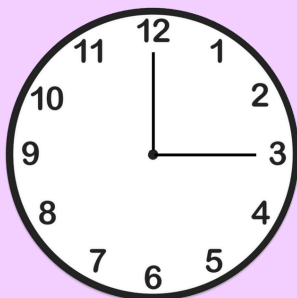
Directions

For each clock below, color in the fraction and write how many minutes it shows.



There are 60 minutes in an hour

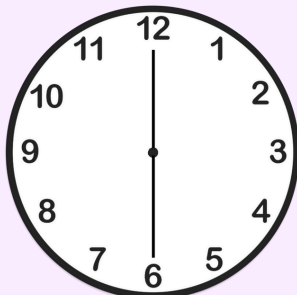
1.



Color in $\frac{1}{4}$ of the hour

$\frac{1}{4}$ hour = ____ minutes

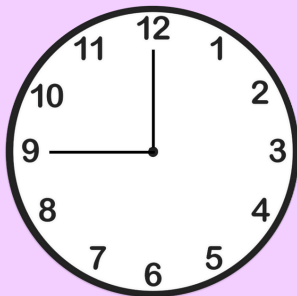
2.



Color in $\frac{1}{2}$ of the hour

$\frac{1}{2}$ hour = ____ minutes

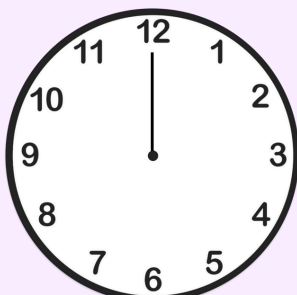
3.



Color in $\frac{3}{4}$ of the hour

$\frac{3}{4}$ hour = ____ minutes

4.



Color the whole clock

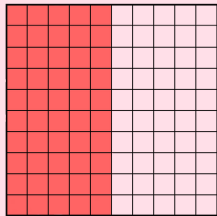
1 hour = ____ minutes

Let's Use a 100 Block!

Directions

Count the shaded squares. Write the fraction that shows how many parts out of 100 are shaded.

Example

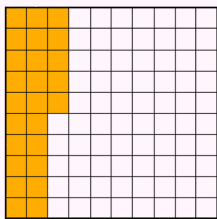


50 parts are shaded
100 parts are present



50
—
100

1.

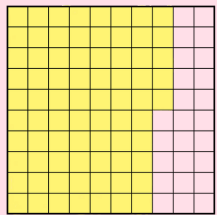


___ parts are shaded
100 parts are present



—

2.

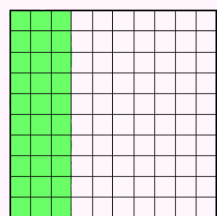


___ parts are shaded
100 parts are present



—

3.

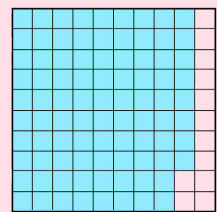


___ parts are shaded
100 parts are present



—

4.

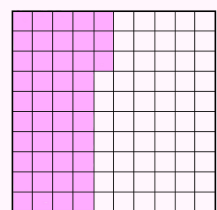


___ parts are shaded
100 parts are present



—

5.

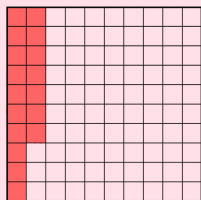


___ parts are shaded
100 parts are present

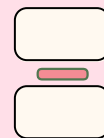


—

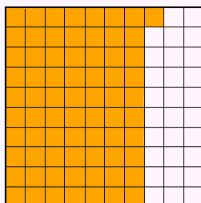
6.



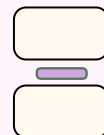
___ parts are shaded
 100 parts are present



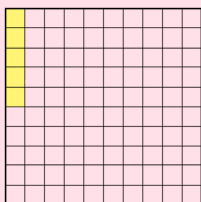
7.



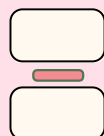
___ parts are shaded
 100 parts are present



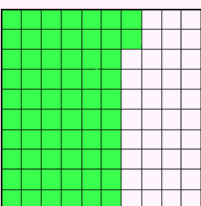
8.



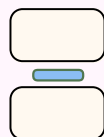
___ parts are shaded
 100 parts are present



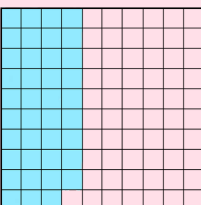
9.



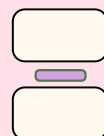
___ parts are shaded
 100 parts are present



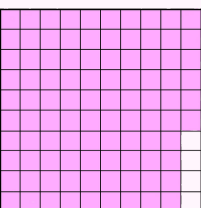
10.



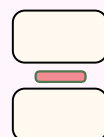
___ parts are shaded
 100 parts are present



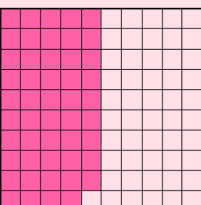
11.



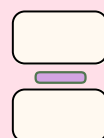
___ parts are shaded
 100 parts are present



12.



___ parts are shaded
 100 parts are present



Let's Use a 100 Block!

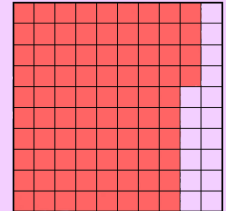
Directions

Color the blocks to show each fraction.

Example

$$\begin{array}{r} 84 \\ \hline 100 \end{array}$$

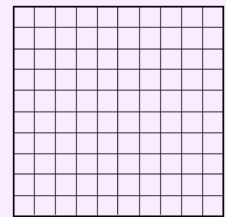
84 parts are shaded
100 parts are present



1.

$$\begin{array}{r} 27 \\ \hline 100 \end{array}$$

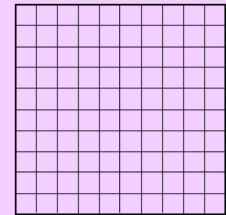
___ parts are shaded
___ parts are present



2.

$$\begin{array}{r} 3 \\ \hline 100 \end{array}$$

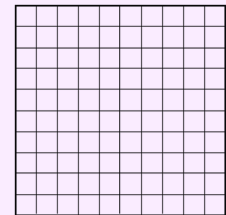
___ parts are shaded
___ parts are present



3.

$$\begin{array}{r} 59 \\ \hline 100 \end{array}$$

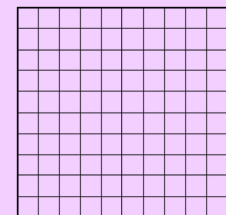
___ parts are shaded
___ parts are present



4.

$$\begin{array}{r} 41 \\ \hline 100 \end{array}$$

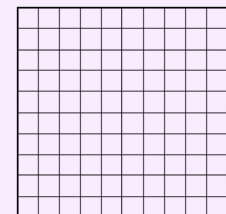
___ parts are shaded
___ parts are present

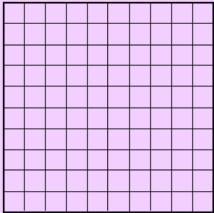


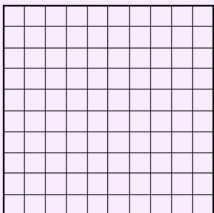
5.

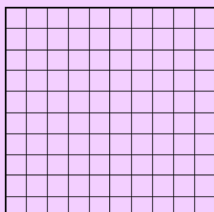
$$\begin{array}{r} 67 \\ \hline 100 \end{array}$$

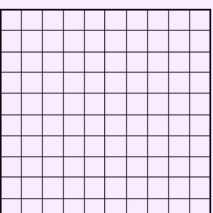
___ parts are shaded
___ parts are present

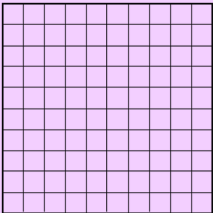


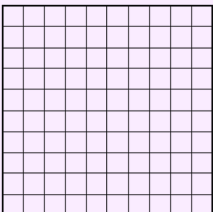
6. $\begin{array}{r} 12 \\ \hline 100 \end{array}$ \rightarrow $\frac{\quad}{\quad}$ parts are shaded
 $\frac{\quad}{\quad}$ parts are present \rightarrow 

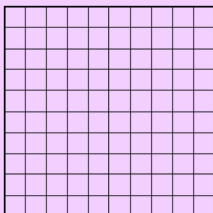
7. $\begin{array}{r} 68 \\ \hline 100 \end{array}$ \rightarrow $\frac{\quad}{\quad}$ parts are shaded
 $\frac{\quad}{\quad}$ parts are present \rightarrow 

8. $\begin{array}{r} 94 \\ \hline 100 \end{array}$ \rightarrow $\frac{\quad}{\quad}$ parts are shaded
 $\frac{\quad}{\quad}$ parts are present \rightarrow 

9. $\begin{array}{r} 35 \\ \hline 100 \end{array}$ \rightarrow $\frac{\quad}{\quad}$ parts are shaded
 $\frac{\quad}{\quad}$ parts are present \rightarrow 

10. $\begin{array}{r} 77 \\ \hline 100 \end{array}$ \rightarrow $\frac{\quad}{\quad}$ parts are shaded
 $\frac{\quad}{\quad}$ parts are present \rightarrow 

11. $\begin{array}{r} 21 \\ \hline 100 \end{array}$ \rightarrow $\frac{\quad}{\quad}$ parts are shaded
 $\frac{\quad}{\quad}$ parts are present \rightarrow 

12. $\begin{array}{r} 50 \\ \hline 100 \end{array}$ \rightarrow $\frac{\quad}{\quad}$ parts are shaded
 $\frac{\quad}{\quad}$ parts are present \rightarrow 



Master Fractions with Confidence – The Fun, Visual Way!

Understanding Fractions is a thoughtfully crafted workbook that makes learning fractions approachable, visual, and engaging.

This book is perfect for:

- Visual learners
- Students with special needs
- Struggling math students
- Homeschooling families and educators

Through clear models, colorful number lines, real-life word problems, and creative challenges, this workbook builds deep understanding of key fraction concepts — one step at a time.