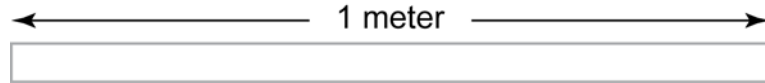


# Lesson 1: Representing fractions

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## Interactive mini-lesson

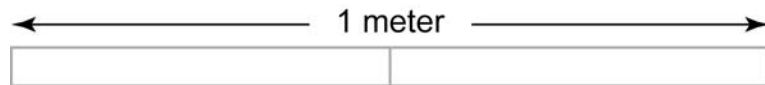
This diagram below represents 1 meter:



1. Shade the whole meter above.

When 1 meter is divided into 2 equal parts, each part is one half of 1 meter.

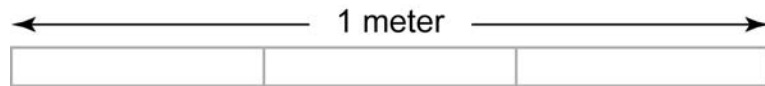
One half is written as  $\frac{1}{2}$ .



2. Shade  $\frac{1}{2}$  of the meter above.

When 1 meter is divided into 3 equal parts, each part is one third of 1 meter.

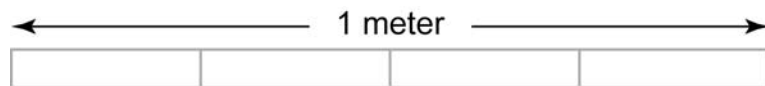
One third is written as  $\frac{1}{3}$ .



3. Shade  $\frac{1}{3}$  of the meter above.

When 1 meter is divided into 4 equal parts, each part is one quarter of 1 meter.

One quarter is written as  $\frac{1}{4}$ .

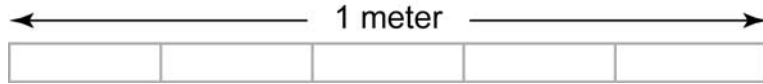


4. Shade  $\frac{1}{4}$  of the meter above.

## Independent Work

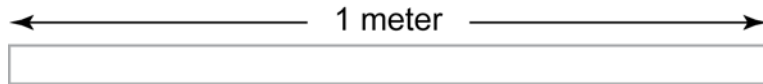
When 1 meter is divided into 5 equal parts, each part is one fifth of 1 meter.

One fifth is written as  $\frac{1}{\square}$ .

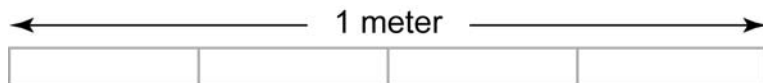


5. Shade  $\frac{1}{5}$  of the meter above.

6. Divide the diagram into 6 equal parts and shade  $\frac{1}{6}$  of it.



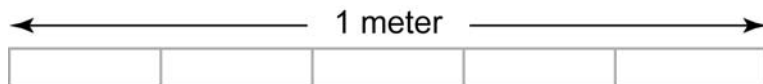
7. When 1 meter is divided into 4 equal parts, each part is  $\frac{1}{\square}$  of 1 meter.



8. How long is 3 parts when a meter is divided into 4 equal parts?

The answer is  $\frac{\square}{\square}$ .

9. Shade in  $\frac{4}{5}$  of 1 meter.

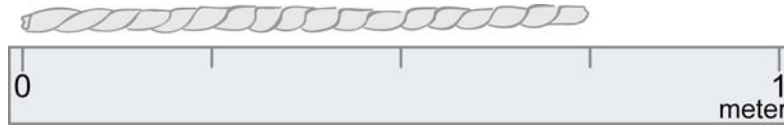


## Lesson 2: Measuring lengths less than 1 meter

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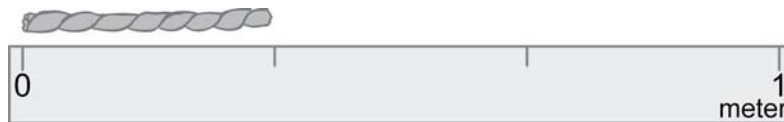
### Interactive mini-lesson

1. Use the meter ruler drawn below to measure the length of the rope in fractions of a meter.



How long is the rope?

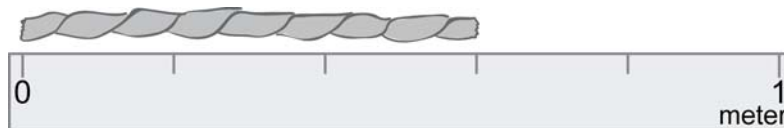
2. Use the meter ruler drawn below to measure the length of the rope in fractions of a meter.



How long is the rope?

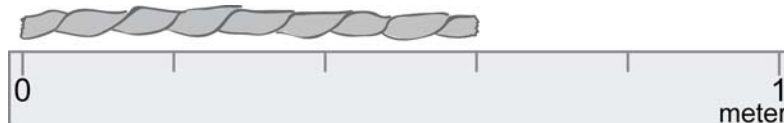
### Independent work

3. Use the meter ruler drawn below to measure the length of the rope in fractions of a meter.



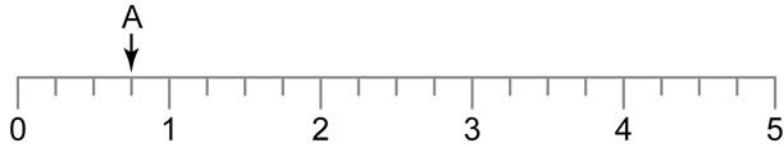
How long is the rope?

4. Look at the diagram below:

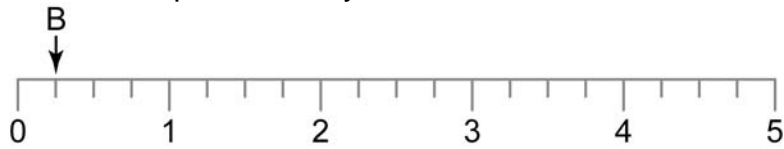


How many equal parts has the meter ruler been divided into?

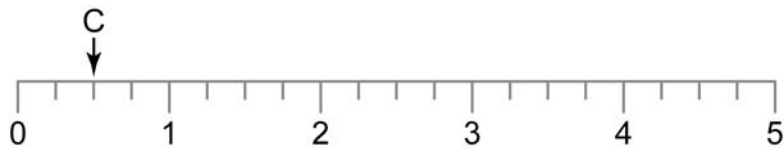
5. What fraction is represented by the letter A on the number line below?



6. What fraction is represented by the letter B on the number line below?



7. What fraction is represented by the letter C on the number line below?



8. Mark these fractions on the number line below:

$$\frac{2}{5}, \frac{3}{5}, \frac{1}{5}$$



## Lesson 3: Working with fractions

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### Interactive mini-lesson

Numbers like  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ , and  $\frac{4}{5}$  are called fractions.

Suppose you have these fractions:

$$\frac{2}{3} \text{ and } \frac{4}{5}$$

The numbers 3 and 5 are called the denominators – the denominator is the bottom number and tells you how many equal parts the whole has been divided into.

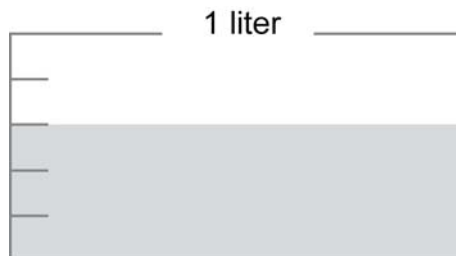
The numbers 2 and 4 are called the numerators – the numerator is the top number and tells you how many of the parts in a whole you have.

The diagrams below show containers that are designed to measure up to a liter of water:

1. How much water is in this container?



2. How much water is in this container?



## Independent Work

3. How much water is in this container?



4. How much water is in this container?



5. Look at this fraction:  $\frac{6}{7}$ .

What is the denominator?

What is the numerator?

6. Write a fraction with denominator 9 and numerator 4.

7. Put these fractions in order from smallest to largest:

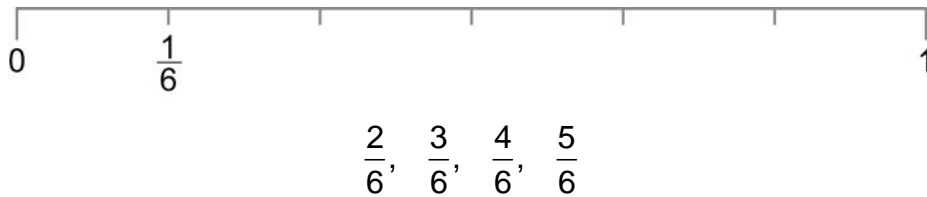
$$\left(\frac{3}{4}, \frac{1}{4}, \frac{2}{4}\right)$$

## Lesson 4: Fractions on the number line

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### Interactive mini-lesson

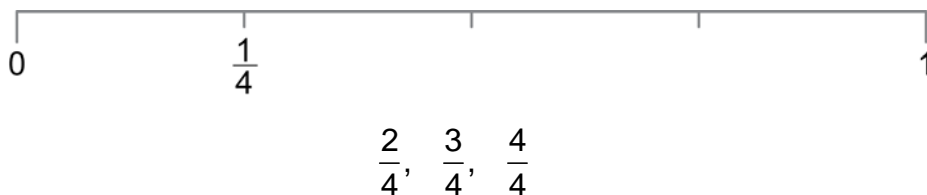
1. Each piece of ribbon is  $\frac{1}{6}$  meter long.
  - a. How long is 2 of these pieces?
  - b. How long is 3 of these pieces?
  - c. How long is 4 of these pieces?
  - d. How long is 5 of these pieces?
  
2. Mark each of these fractions on the number line below:



3. Which is longer  $\frac{3}{6}$  or  $\frac{5}{6}$ ?

### Independent Work

4. Each piece of ribbon is  $\frac{1}{4}$  meter long.
  - a. How long is 2 of these pieces?
  - b. How long is 3 of these pieces?
  - c. How long is 4 of these pieces?
  
5. Mark each of these fractions on the number line below:



6. Which is longer  $\frac{3}{4}$  or  $\frac{4}{4}$ ?

7. Look at the containers below:



Container A



Container B

- How much liquid is in container A?
- How much liquid is in container B?
- Mark the amounts of liquid in Container A and Container B on the number line below:

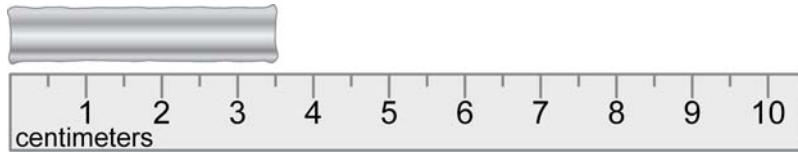


## Lesson 5: Measuring lengths

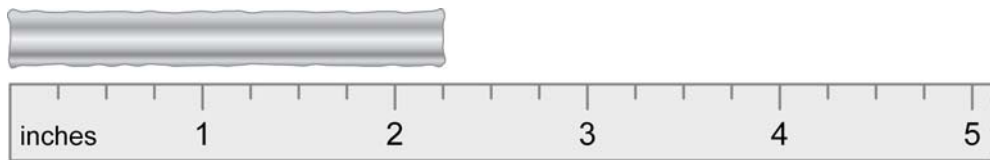
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### Interactive mini-lesson

1. Use the ruler drawn below to measure the length of the ribbon in centimeters.



2. Use the ruler drawn below to measure the length of the ribbon in inches.

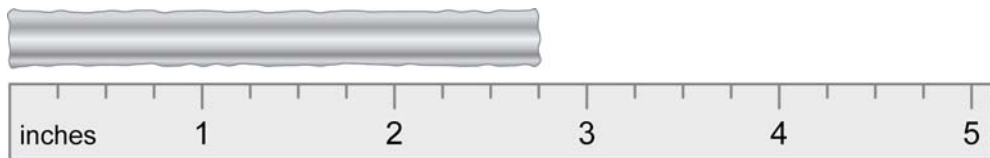


When a fraction is greater than 1, it can be written with a whole number part and a fraction part.

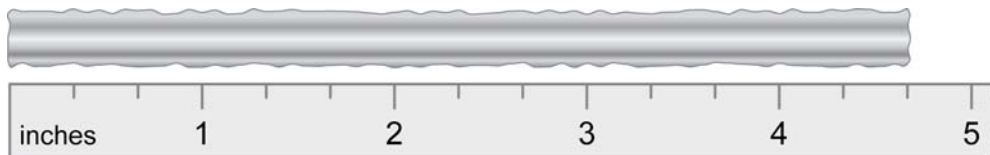
A number that has a whole number part and a fraction part is called a mixed number.

### Independent work

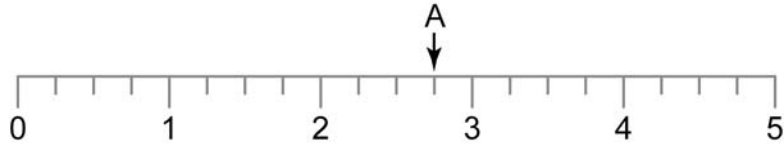
3. Use the ruler drawn below to measure the length of the ribbon in inches, write your answer as a mixed number.



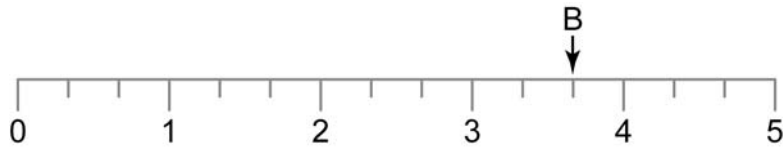
4. Use the ruler drawn below to measure the length of the ribbon in inches, write your answer as a mixed number.



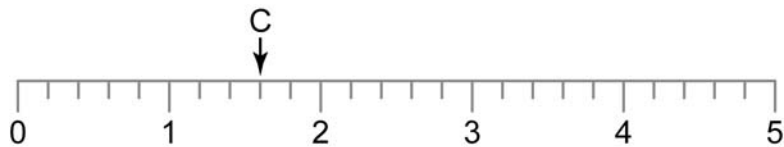
5. What mixed number is represented by the letter A on the number line below?



6. What mixed number is represented by the letter B on the number line below?



7. What mixed number is represented by the letter C on the number line below?



8. Mark these mixed numbers on the number line below:

$$1\frac{2}{5}, 2\frac{3}{5}, 3\frac{1}{5}$$

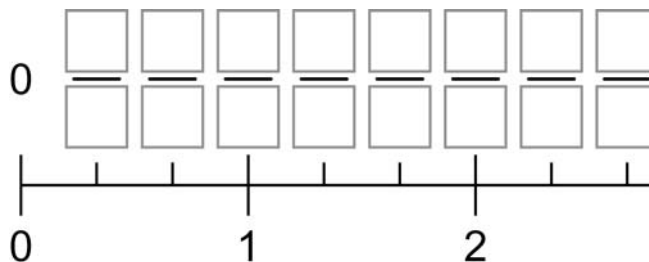


# Lesson 6: Fractions less than, greater than, or equal to 1

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## Interactive mini-lesson

1. Let's write each of the numbers that is marked on this number line as a fraction with a denominator 3.



- a. How many  $\frac{1}{3}$  are there in  $\frac{2}{3}$ ?      f. How many  $\frac{1}{3}$  are there in  $\frac{6}{3}$ ?
- b. How many  $\frac{1}{3}$  are there in  $\frac{3}{3}$ ?      g. Write  $\frac{6}{3}$  as a whole number.
- c. Write  $\frac{3}{3}$  as a whole number.      h. How many  $\frac{1}{3}$  are there in  $\frac{7}{3}$ ?
- d. How many  $\frac{1}{3}$  are there in  $\frac{4}{3}$ ?      i. How many  $\frac{1}{3}$  are there in  $\frac{8}{3}$ ?
- e. How many  $\frac{1}{3}$  are there in  $\frac{5}{3}$ ?

The fraction  $\frac{4}{3}$  can be written as a whole number plus a fraction.

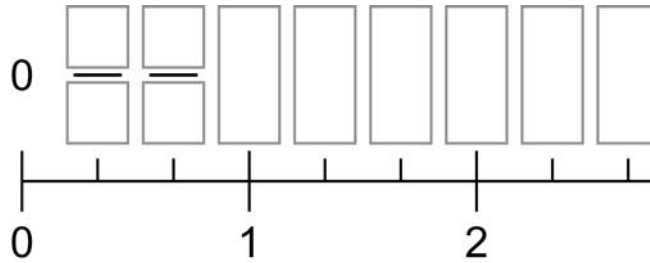
$$\frac{4}{3} = \square + \frac{\square}{\square}$$

The fraction  $\frac{4}{3}$  can be written as the mixed number \_\_\_\_\_.

Fractions that are greater than 1 can be written either as a mixed number or as a whole number.

### Independent work

2. Now, let's write each of the numbers marked on the number line as a fraction, a whole number, or as a mixed number.



3. Write each fraction as a mixed number:

Fraction	Mixed number
$\frac{4}{3}$	
$\frac{5}{3}$	
$\frac{6}{3}$	
$\frac{7}{3}$	
$\frac{8}{3}$	

4. Draw a circle around the fractions that can be written as mixed numbers:

$$\frac{5}{6}, \frac{5}{4}, \frac{9}{3}, \frac{10}{6}, \frac{10}{3}$$

5. Draw a circle around the fractions that can be written as whole numbers:

$$\frac{7}{7}, \frac{6}{2}, \frac{11}{5}, \frac{8}{4}, \frac{10}{5}$$

6. Draw a circle around the fractions that are less than 1:

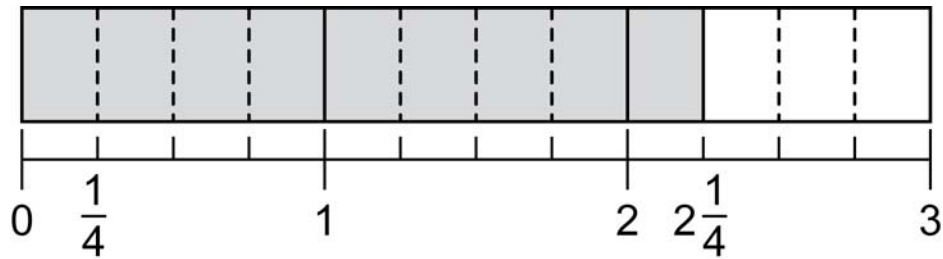
$$\frac{7}{8}, \frac{3}{3}, \frac{6}{5}, \frac{12}{4}, \frac{3}{5}$$

## Lesson 7: Writing mixed numbers as fractions

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### Interactive mini-lesson

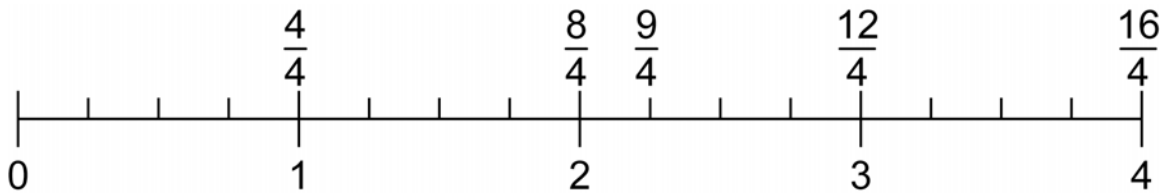
1. Write the mixed number  $2\frac{1}{4}$  as a fraction.



How many  $\frac{1}{4}$ 's make-up  $2\frac{1}{4}$ ?

$$2\frac{1}{4} = \frac{\square}{4}$$

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



How many  $\frac{4}{4}$ 's are there in  $\frac{9}{4}$ ?

$$\frac{9}{4} = \frac{\square}{\square}$$

## Independent work

3. Write each mixed number as a fraction.

$$2\frac{1}{2}, 3\frac{3}{4}, 2\frac{4}{6}, 1\frac{9}{10}$$

4. Write each fraction as a mixed number.

$$\frac{5}{3}, \frac{6}{4}, \frac{7}{6}, \frac{15}{4}, \frac{19}{6}$$

5. Write each fraction as a mixed number or a whole number.

$$\frac{15}{3}, \frac{25}{4}, \frac{20}{4}, \frac{9}{4}, \frac{29}{3}$$

## Lesson 8: Adding fractions

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### Interactive mini-lesson

1. Two brothers are painting a wall.

Mario paints  $\frac{2}{5}$  of the wall.

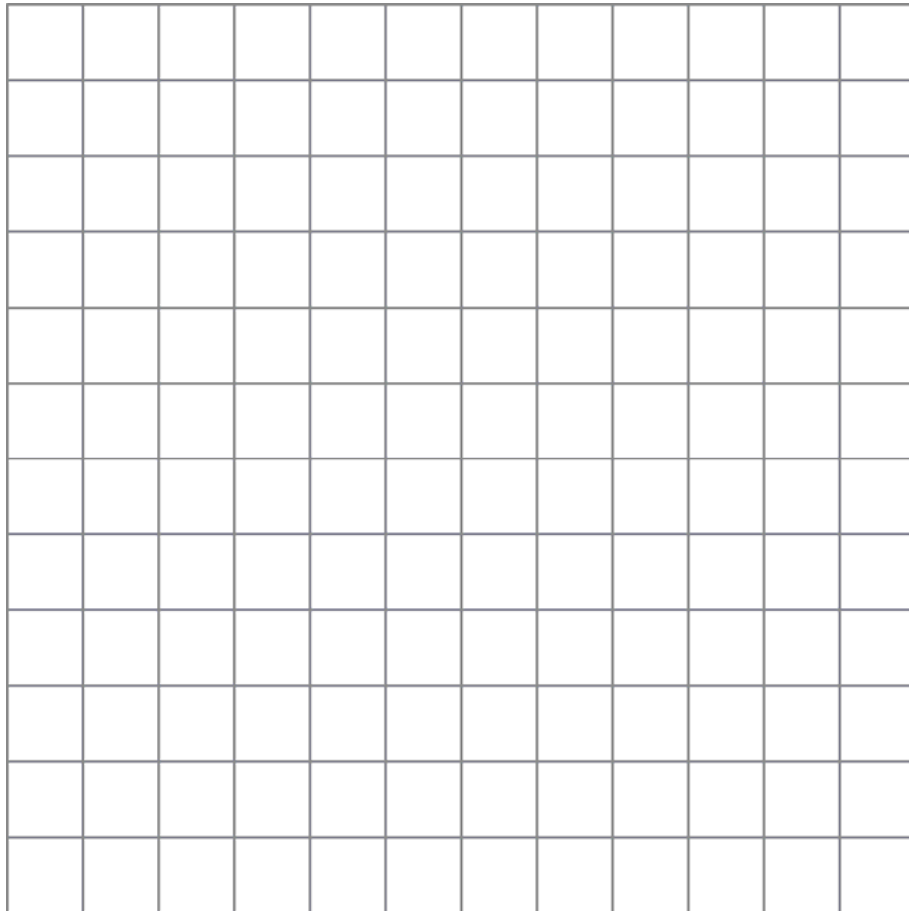
Jason paints  $\frac{1}{5}$  of the wall.

How much of the wall have they painted in all?

Write a math sentence for this problem.

Draw a diagram or diagrams using the grid below to represent that information in this problem.

Draw a diagram using the grid below to represent the solution to this problem.



## Independent work

2. Two girls are filling a tank.

Stephanie fills  $\frac{2}{7}$  of the tank.

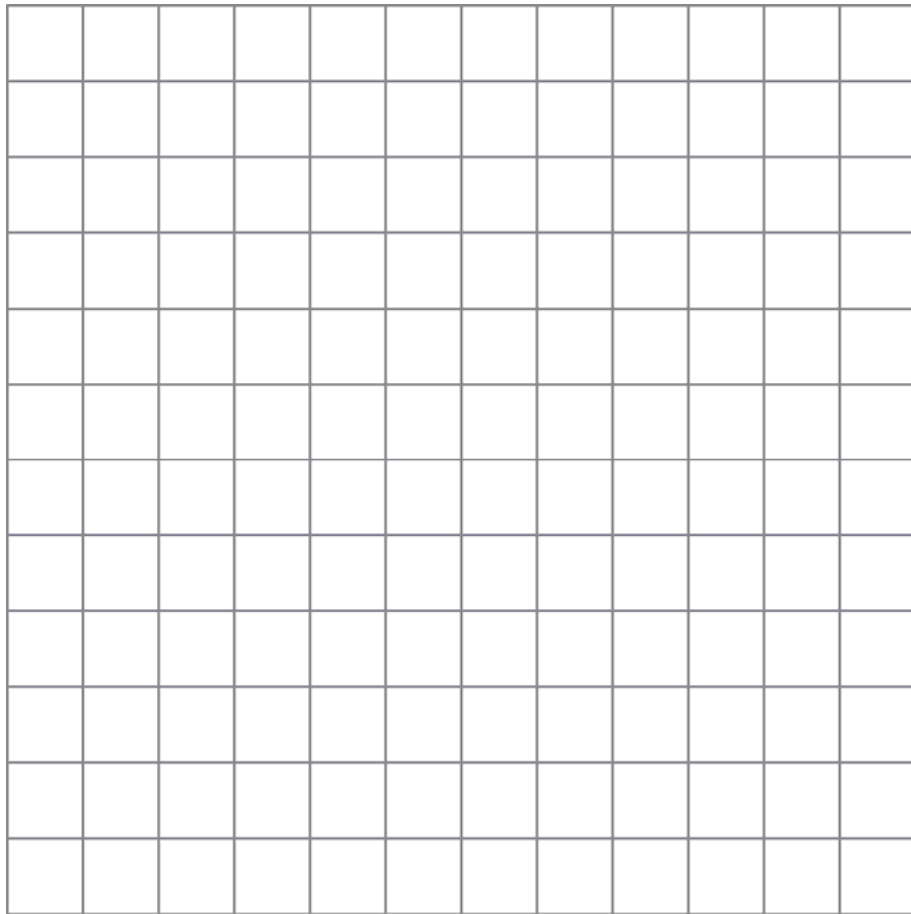
Daisy fills  $\frac{3}{7}$  of the tank.

How much of the tank have they filled in all?

Write a math sentence for this problem.

Draw a diagram or diagrams to represent that information in this problem.

Draw a diagram to represent the solution to this problem.



3. Add the following fractions, and write the answer as a mixed number where possible:

a.  $\frac{4}{5} + \frac{2}{5}$

b.  $\frac{6}{10} + \frac{3}{10}$

c.  $\frac{3}{6} + \frac{5}{6}$





## Lesson 9: Adding and subtracting mixed numbers

---

### Interactive mini-lesson

1. Mario has  $2\frac{3}{4}$  feet of rope.

Jason has  $3\frac{3}{4}$  feet of rope.

How much rope is there altogether?

How many different ways can you do this problem?

2. Mario has  $2\frac{2}{5}$  feet of rope.

He cuts off  $\frac{4}{5}$  feet of rope.

How long is the rope now?

How many different ways can you do this problem?

### Independent work

3. A student was making a nut mix.

He added  $2\frac{5}{6}$  cup of almonds and  $3\frac{3}{6}$  cup of cashews. How much nut mix did he have altogether?

4. Rebecca had a board  $7\frac{2}{5}$  meters long. She cut off  $3\frac{4}{5}$  meters.

How long was the board that was left?

5. Add the following fractions, and write the answer as a mixed number:

a.  $5\frac{6}{9} + 3\frac{4}{9}$

b.  $4\frac{6}{11} + 5\frac{8}{11}$

c.  $3\frac{5}{7} + 4\frac{3}{7}$

6. Add the following fractions, and write the answer as a mixed number or a whole number:

a.  $5\frac{3}{5} + 4\frac{2}{5}$

b.  $4\frac{3}{10} + 3\frac{2}{10}$

c.  $3\frac{3}{6} + 2\frac{2}{6}$

7. Subtract the following fractions:

a.  $5\frac{4}{7} - 3\frac{2}{7}$

b.  $6\frac{3}{8} - 2\frac{6}{8}$

c.  $9\frac{2}{11} - 5\frac{2}{11}$

8. Subtract the following fractions:

a.  $5\frac{5}{9} - 3\frac{7}{9}$

b.  $5\frac{3}{7} - \frac{5}{7}$

c.  $8\frac{5}{12} - 1\frac{7}{12}$

## Lesson 9: Putting it altogether

---

1. The following calculation is wrong. Prove that it is wrong and show how to find the correct answer.

$$\frac{5}{6} + \frac{3}{6} = \frac{8}{12}$$

2. The following calculation is wrong. Prove that it is wrong and show how to find the correct answer.

$$1\frac{2}{5} + \frac{4}{5} = \frac{12}{5} + \frac{4}{5} = \frac{16}{5} = 3\frac{1}{5}$$

3. Tony went for a walk.

He walked for  $\frac{1}{5}$  of an hour and then walked for  $\frac{3}{5}$  of an hour.

How much time did Tony spend walking?

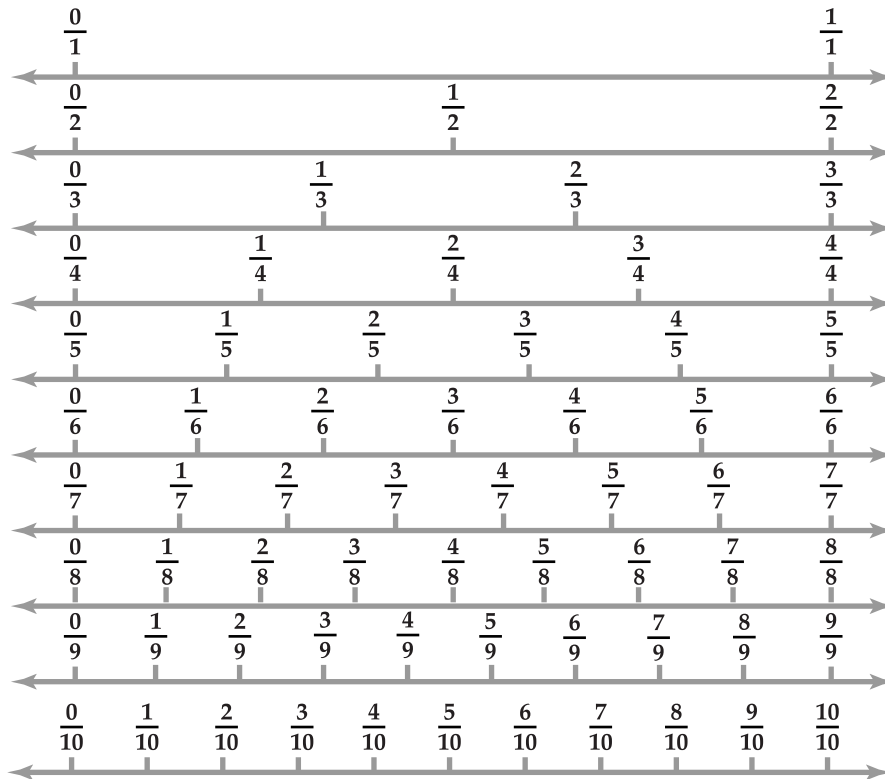
4. You have  $1\frac{1}{4}$  pounds of nuts.

If you use  $\frac{3}{4}$  pounds of nuts, how many pounds of nuts will you have left?

## Lesson 11: Equivalent Fractions

---

### Interactive mini-lesson



1. Look at the diagram above and write down four fractions that are equivalent to  $\frac{5}{10}$ .
2. Look at the diagram above and write down two fractions that are equivalent to  $\frac{2}{6}$ .

### Independent work

3. Write down a fraction that is equivalent to  $\frac{1}{5}$ .
4. Write down four fractions that are equivalent to  $\frac{3}{3}$ .

5. Write down two fractions that are equivalent to  $\frac{2}{3}$ .
6. Which fraction is bigger  $\frac{1}{2}$  or  $\frac{1}{3}$ ?
7. How many  $\frac{1}{4}$ 's are equivalent to  $\frac{1}{2}$ ?
8. How many  $\frac{1}{3}$ 's are equivalent to  $\frac{3}{9}$ ?
9. How many  $\frac{1}{4}$ 's are equivalent to  $\frac{4}{8}$ ?
10. How many  $\frac{1}{5}$ 's are equivalent to  $\frac{4}{10}$ ?

## Lesson 12: Creating equivalent fractions

---

### Interactive mini-lesson

When you multiply (or divide) the numerator and the denominator of a fraction by the same number, you create another fraction that is equivalent.

What number do you multiply the numerator and denominator of the fraction  $\frac{2}{3}$  by in order to create the equivalent fraction  $\frac{4}{6}$ ?

$$\frac{2}{3} = \frac{2 \times \square}{3 \times \square} = \frac{4}{6}$$

What number do you multiply the numerator and denominator of the fraction  $\frac{2}{3}$  by in order to create the equivalent fraction  $\frac{8}{12}$ ?

$$\frac{2}{3} = \frac{2 \times \square}{3 \times \square} = \frac{8}{12}$$

What number do you divide the numerator and denominator of the fraction  $\frac{6}{9}$  by in order to create the equivalent fraction  $\frac{2}{3}$ ?

$$\frac{6}{9} = \frac{6 \div \square}{9 \div \square} = \frac{2}{3}$$

## Independent work

1. Create equivalent fractions for each fraction below so that they all have a denominator of 20:

a.  $\frac{3}{5}$

b.  $\frac{6}{10}$

c.  $\frac{1}{4}$

2. Write each pair of fractions so there is a common denominator:

a.  $\frac{7}{9}, \frac{2}{3}$

b.  $\frac{7}{12}, \frac{1}{4}$

c.  $\frac{7}{9}, \frac{3}{7}$

3. Write each pair of fractions so there is a common denominator:

a.  $2\frac{2}{3}, 3\frac{4}{9}$

b.  $1\frac{3}{5}, 2\frac{2}{7}$

c.  $2\frac{3}{8}, 2\frac{1}{6}$

## Lesson 13: Using equivalent fractions to add fractions

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### Interactive mini-lesson

Suppose that we want to add these two fractions.

$$\frac{1}{3} + \frac{1}{2}$$

Write the addition as equivalent fractions with any common denominator:

Create equivalent fractions that are the same size as  $\frac{1}{3}$  and  $\frac{1}{2}$ . Then find the two that have the same a denominator!

$$\frac{1}{3} = \frac{2}{6} = \frac{3}{9}$$

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$$

Then write the addition as two fractions with a common denominator.

$$\frac{2}{6} + \frac{3}{6}$$

$$\frac{2+3}{6} = \frac{5}{6}$$

## Independent work

1. You have  $2\frac{2}{3}$  pounds of cashew nuts and  $3\frac{1}{4}$  pound of almond nuts.

How many pounds of nuts is there altogether?

2. Add the following fractions, and write the answer as a mixed number or as a whole number where possible:

a.  $\frac{3}{5} + \frac{3}{4}$       b.  $\frac{6}{10} + \frac{4}{5}$       c.  $\frac{1}{2} + \frac{2}{3}$

3. Subtract the following fractions:

a.  $\frac{7}{9} - \frac{2}{3}$       b.  $\frac{7}{12} - \frac{1}{4}$       c.  $\frac{7}{9} - \frac{3}{7}$

4. Add the following fractions:

a.  $2\frac{2}{3} + 3\frac{4}{9}$       b.  $1\frac{3}{5} + 2\frac{2}{7}$       c.  $2\frac{3}{8} + 2\frac{1}{6}$

5. Add the following fractions:

a.  $5\frac{3}{4} + 4\frac{5}{7}$       b.  $2\frac{9}{10} + 3\frac{8}{9}$       c.  $3\frac{3}{8} + 2\frac{2}{5}$

6. Subtract the following fractions:

a.  $5\frac{2}{5} - 3\frac{1}{3}$       b.  $6\frac{1}{3} - 2\frac{2}{5}$       c.  $9\frac{1}{8} - 5\frac{1}{3}$

7. Subtract the following fractions:

a.  $2\frac{5}{9} - 1\frac{7}{8}$       b.  $3\frac{3}{7} - 1\frac{5}{6}$       c.  $4\frac{2}{3} - 1\frac{1}{4}$

## Lesson 13: Multiplying fractions

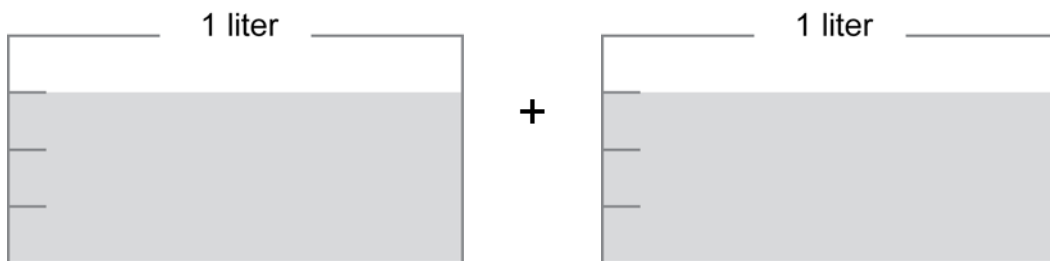
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### Interactive mini-lesson

At a party you plan to serve each person  $\frac{3}{4}$  liters of juice.



How many liters of juice do you need for 2 people?



$$\frac{3}{4} + \frac{3}{4} = \frac{6}{4}$$

$$\frac{3}{4} \times 2 = \frac{6}{4} = \frac{3}{2}$$

$$\frac{3}{4} \times \frac{2}{1} = \frac{6}{4} = \frac{3}{2}$$

When you multiply two fractions, multiply the two denominators to give a new denominator and then multiply the two numerators to give a new numerator.

### Independent work

1. Multiply these fractions and write the answer in its simplest form:

a.  $\frac{3}{5} \times \frac{3}{4}$       b.  $\frac{6}{10} \times \frac{4}{5}$       c.  $\frac{1}{2} \times \frac{2}{3}$

2. Multiply these fractions and write the answer in its simplest form:

a.  $2\frac{2}{3} \times 3\frac{4}{9}$       b.  $1\frac{3}{5} \times 2\frac{2}{7}$       c.  $2\frac{3}{8} \times 2\frac{1}{6}$

3. Subtract the following fractions:

a.  $\frac{7}{9} - \frac{2}{3}$       b.  $\frac{7}{12} - \frac{1}{4}$       c.  $\frac{7}{9} - \frac{3}{7}$

## Lesson 15: Dividing fractions

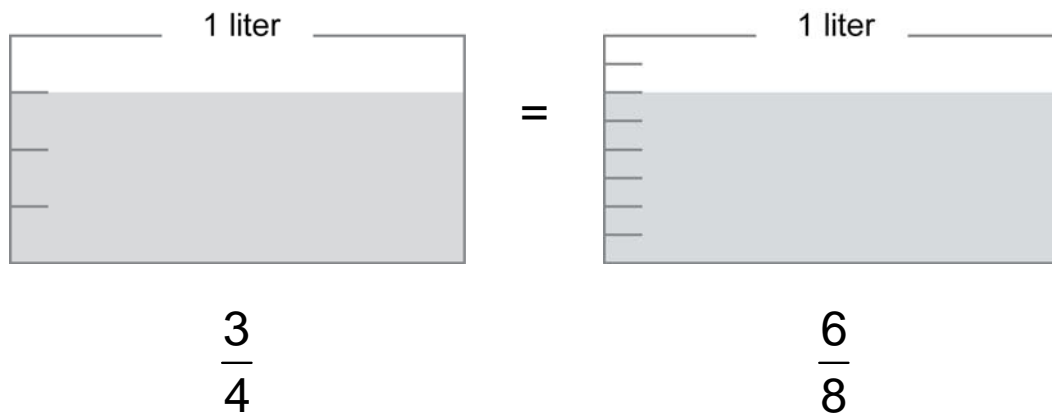
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### Interactive mini-lesson

At a party you plan to share  $\frac{3}{4}$  liters of juice between two people.



How much juice does each person get?



What is  $\frac{3}{4}$  shared between two people?

You know that  $\frac{3}{4}$  is equivalent to  $\frac{6}{8}$ .

When  $\frac{6}{8}$  is shared between two people each gets  $\frac{3}{8}$  liters.

$$\frac{3}{4} = \frac{3}{4} \div \frac{2}{1} = \frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$$

When you divide by a fraction, invert it and then multiply the two denominators to give a new denominator and then multiply the two numerators to give a new numerator.

## Independent work

1. Divide the following fractions:

a.  $\frac{7}{9} \div \frac{2}{3}$

b.  $\frac{7}{12} \div \frac{1}{4}$

c.  $\frac{7}{9} \div \frac{3}{7}$

2. Divide the following fractions:

a.  $5\frac{2}{5} \div 3\frac{1}{3}$

b.  $6\frac{1}{3} \div 2\frac{2}{5}$

c.  $9\frac{1}{8} \div 5\frac{1}{3}$

## Lesson 16: Working with fractions

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1. Copy and complete the following to find the sum of two fractions:

a.  $\frac{1}{5} + \frac{3}{7} =$   
 $\frac{\square}{\square} + \frac{\square}{35} =$   
 $\frac{\square}{35}$

b.  $\frac{5}{6} - \frac{3}{8} =$   
 $\frac{\square}{\square} - \frac{9}{\square} =$   
 $\frac{\square}{\square}$

2. Compare the size of these fractions by finding common denominators:

a. $\left(\frac{5}{7}, \frac{3}{8}\right)$	b. $\left(2\frac{3}{4}, 2\frac{5}{8}\right)$	c. $\left(\frac{8}{10}, \frac{6}{8}, \frac{5}{7}\right)$
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3. Add or subtract these fractions by finding common denominators:

a. $\frac{1}{4} + \frac{2}{6}$	b. $\frac{1}{10} + \frac{1}{7}$	c. $\frac{1}{10} + \frac{1}{12}$	d. $1\frac{1}{4} + 1\frac{2}{6}$
e. $\frac{1}{4} - \frac{1}{6}$	f. $\frac{5}{7} + \frac{3}{6}$	g. $2\frac{1}{3} - \frac{3}{8}$	h. $2\frac{1}{9} - 1\frac{1}{2}$

## Lesson 17: Solving problems

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1. Terry had a rope  $9\frac{2}{3}$  meters long.

She cut off  $5\frac{3}{4}$  meters.

How long was the rope that was left?

2. Tony went for a walk.

He walked for  $\frac{1}{5}$  of an hour and then walked for  $\frac{6}{7}$  of an hour.

How much time did Tony spend walking?

3. You have  $1\frac{1}{3}$  liters of milk in a jug and  $\frac{3}{4}$  liters of milk in a carton.

How many liters of milk have you altogether?

4. You have  $1\frac{1}{3}$  liters of milk and you use  $\frac{2}{3}$  liters of milk.

How many liters of milk have you left?

5. Thomas went for a drive.

He drove for  $50\frac{3}{4}$  miles and then drove for  $48\frac{3}{8}$  miles.

How far did he drive altogether?

## Lesson 18: Finding and correcting errors—working with fractions

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Each of following calculations is wrong. In each, find the mistake and then fix it. Make sure to give the correct answer and show a correct method in FULL.

1.

$$\frac{1}{4} + \frac{1}{3} = \frac{2}{7}$$

2.

$$\frac{3}{5} + \frac{1}{3} = \frac{9}{15} + \frac{3}{15} = \frac{12}{15}$$

3.

$$\frac{4}{7} - \frac{3}{4} = \frac{1}{3}$$

4.

$$\frac{2}{3} - \frac{3}{5} = \frac{10}{15} - \frac{3}{5} = \frac{7}{10}$$

## Lesson 19: Finding and correcting errors

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Each of following calculations is wrong. In each, find the mistake and then fix it. Make sure to give the correct answer and show a correct method in FULL.

1.

$$2\frac{1}{3} + 4\frac{1}{2} = \frac{7}{3} + \frac{5}{2} = \frac{14}{6} + \frac{15}{6} = \frac{29}{6} = 4\frac{2}{3}$$

2.

$$1\frac{1}{9} - \frac{3}{9} = \frac{11}{9} - \frac{3}{9} = \frac{8}{9}$$

3.

$$50\frac{3}{5} - 48\frac{1}{3} = 2\frac{1}{2}$$

## Lesson 20: Magic Squares with fractions

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### Interactive mini-lesson

Here is a magic square that is made up of fractions.

In a magic square, each row, each column, and diagonal adds up to the same *magic number*.

In this magic square each row, each column, and each diagonal adds up to  $4\frac{4}{5}$ .

2	$1\frac{4}{5}$	1	$= 4\frac{4}{5}$
$\frac{3}{5}$	$1\frac{3}{5}$	$2\frac{3}{5}$	$= 4\frac{4}{5}$
$2\frac{1}{5}$	$1\frac{2}{5}$	$1\frac{1}{5}$	$= 4\frac{4}{5}$
$= 4\frac{4}{5}$	$= 4\frac{4}{5}$	$= 4\frac{4}{5}$	

Show that the sum of each diagonal is  $= 4\frac{4}{5}$ .

$$2 + 1\frac{3}{5} + 1\frac{1}{5} =$$

$$1 + 1\frac{3}{5} + 2\frac{1}{5} =$$

### Independent work

In this magic square the *magic number* is  $2\frac{5}{8}$ .

Complete this magic square so that each row, each column, and each diagonal adds up to  $2\frac{5}{8}$ .

		$\frac{1}{2}$
	$\frac{7}{8}$	$1\frac{1}{2}$

## Lesson 21: Making gravy

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Here is a recipe for making gravy to go with braised ribs. Suppose that you make this gravy exactly as described below.

How much gravy will you have when you are finished? Give your answer in cups.

### **Ingredients needed for the gravy**

8 cups of stock

Salt & pepper

1 cup of braising liquid

### **How to make the gravy**

Boil 2 cups of stock in a pot. Simmer until half of the liquid remains.

Add 2 more cups of stock to the pot. Simmer until half of the liquid remains.

Add another 2 cups of stock to the pot. Simmer until half of the liquid remains.

Add the last 2 cups of stock to the pot. Simmer until half of the liquid remains in the pot.

Add 1 cup of the braising liquid. Simmer until half of the liquid remains in the pot.

Season well with salt and pepper.

## Lesson 22: Solving problems with fractions

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1. Prove that this calculation is wrong! Show how to do it correctly.

$$\frac{5}{6} + \frac{3}{6} = \frac{8}{12}$$

2. Look carefully at the problem below. Prove that the answer is wrong. Show how to do it correctly.

$$\frac{1}{2} + \frac{2}{4} = \frac{3}{6}$$

3. Which of the following are mixed numbers and which fractions are less than 1?

$$\frac{2}{9}, 1\frac{3}{5}, \frac{4}{9}, 3\frac{4}{5}, 5\frac{3}{8}, \frac{1}{10}$$

Mixed Numbers	Fractions less than 1

4. Which inequality,  $<$  or  $>$ , goes in the box to make the number sentence true?

a. $1 \square \frac{1}{7}$	b. $\frac{7}{8} \square 2\frac{1}{3}$	c. $2\frac{4}{8} \square 1\frac{6}{8}$
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5. Complete this sentence by putting a number in the box:

- a. The fraction  $\frac{7}{8}$  is made up of   $\frac{1}{8}$ 's.
- b. The number  $4\frac{4}{5}$  is made up of  and  $\frac{4}{5}$ .
- c. The fraction with denominator 6 and numerator  is the same as 1.

6. Complete the following by filling in the boxes:

a.  $3 = \frac{\square}{4}$

b.  $5 = 4\frac{\square}{5}$

c.  $5\frac{1}{8} = 4\frac{\square}{8}$

7. Order the following fractions from largest to the smallest:

a.  $\left(\frac{1}{3}, \frac{1}{8}, \frac{1}{6}\right)$

b.  $\left(\frac{3}{7}, \frac{11}{7}, \frac{7}{7}\right)$