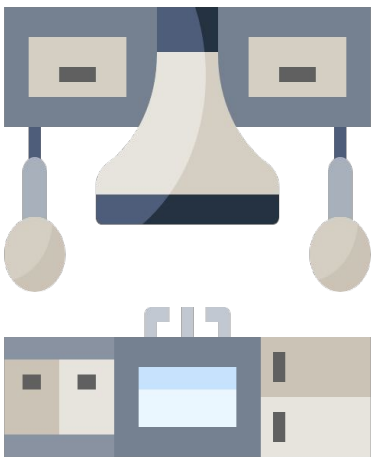
Helping With Math

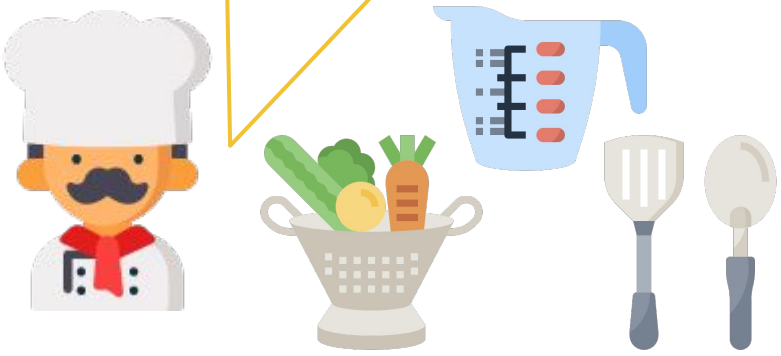
Interpreting Fractions as Division

GRADE 5

A fraction represents a part of a whole or, in general, any number of equal parts while division is the process a of distributing a group of things or numbers into equal parts.

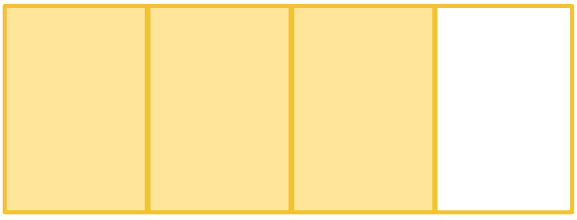


Welcome to our kitchen! I am Chef Gordon, the head chef of this restaurant. We are preparing for an event tonight. Can you help us to do some calculations?



ILLUSTRATING FRACTIONS

Let us recall some basic information about fractions. Below are some representations of fractions.

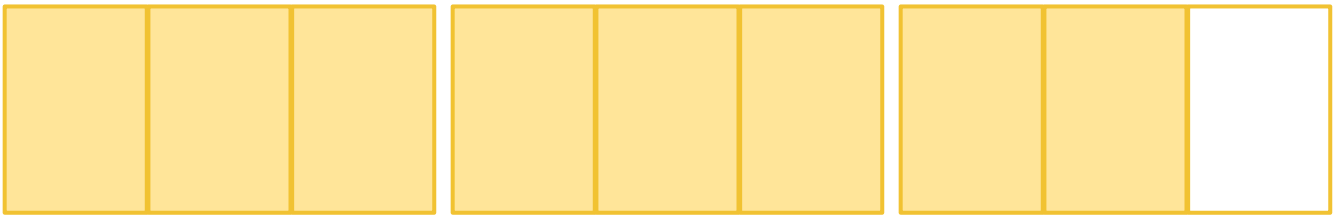


$= \frac{3}{4}$ **Three- fourths**

$\frac{3}{4}$

Numerator - represents how many parts of that whole are being considered.

Denominator - represents the total number of parts created from the whole.



$\frac{8}{3}$ **Eight - thirds** or $2\frac{2}{3}$ **Two and two-thirds**

Improper fraction

Mixed Numbers

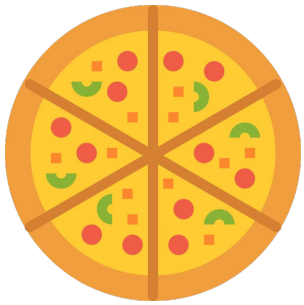
CONNECTING FRACTIONS AND DIVISIONS

When the numerator is divided by the denominator, this means that a fraction is a division problem.

ILLUSTRATIVE EXAMPLES

1. Four customers are sharing a plate of delicious pepperoni pizza. How much pizza did each customer get?

Solution:



There are six slices of pizza.

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

Shared by these four customers.

$$\frac{6}{4} = 6 \div 4$$

$$= \frac{6}{4} = \textbf{1.5 slices per customer}$$

CONNECTING FRACTIONS AND DIVISIONS

2. The restaurant crew needs to cook 8 dishes in one hour. Given that each has equal number of cooking minutes, how long does it take for a dish to be prepared?

Solution:

One hour = 60 minutes

$$\frac{60}{8}$$

8 dishes to be cooked

$$\frac{60}{8} = 60 \div 8$$

$$= \frac{60}{8} = 7.5 \text{ minutes per dish}$$

TRY THIS!

3. Five students shared three deserts. How much desert did each student get?

TABLE OF ACTIVITIES

1. HWM Restaurant
2. Chef Jim’s Signature Dish
3. Asian Foods
4. Menu for Today
5. Enjoying Continental Breakfast
6. Cooking Time
7. Crowd’s Favorite
8. The Kitchen Crew
9. Itadakimasu
10. Food for Thought

HWM RESTAURANT

Today is the grand opening of HWM Restaurant! Get a discount coupon for their products by expressing the following division sentence as fractions. Note: express them in lowest term if necessary.

1. 38 ÷ 4 =

2. 100 ÷ 5 =

3. 45 ÷ 6 =

4. 95 ÷ 7 =

5. 350 ÷ 12 =

6. 22 ÷ 3 =

7. 64 ÷ 15 =

8. 88 ÷ 10 =

CHEF JIM'S SIGNATURE DISH

These improper fractions need to be rewritten as mixed numbers so that Chef Jim can cook his signature dish.

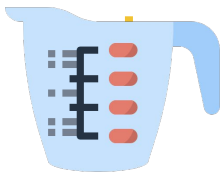
1. $\frac{90}{12} =$

2. $\frac{56}{10} =$

3. $\frac{100}{15} =$

4. $\frac{230}{6} =$

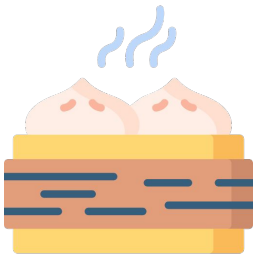
5. $\frac{500}{9} =$

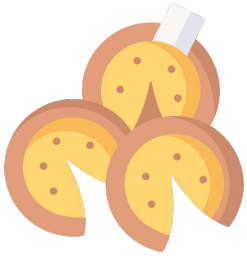


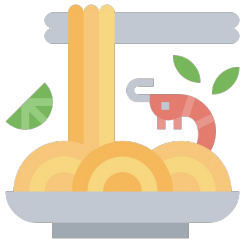
ASIAN FOODS

Try these mouth-watering asian foods! Grab all of these by determining whether the following statements are TRUE or FALSE.

The entire restaurant is busy for the event that is booked on their place. There will be 60-70 guests arriving. The crew prepared 500 pieces of steamed dimsums, 110 colorful fortune cookies, and 12 kilos of delicious pad thai noodles.





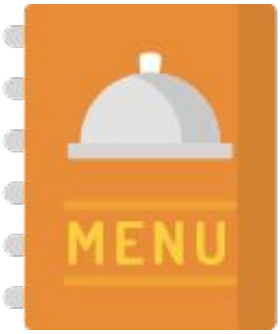


	1. The guests can share at most 7 pieces of dimsums.
	2. The guests can be served with 9 pieces of dimsums each.
	3. 65 guests can have 2 fortune cookies each.
	4. A 100-gram serving of delicious pad thai is enough for the guests..
	5. Each guest can eat 5 pieces of dimsums and 4 fortune cookies,

MENU FOR TODAY

Check out the menu for today by dividing these whole numbers. Put a check on the box if the quotient can be expressed as mixed number.

☐ 1. 100 ÷ 6



☐ 2. 90 ÷ 5

☐ 3. 72 ÷ 10

☐ 4. 83 ÷ 2

☐ 5. 372 ÷ 8

☐ 6. 295 ÷ 5

☐ 7. 416 ÷ 13

☐ 8. 121 ÷ 6

ENJOYING CONTINENTAL BREAKFAST

Enjoy these continental breakfast as you illustrate the following fractions.

1. **Twelve-fifths**

2. **Eight-thirds**

3. **ten-sixths**

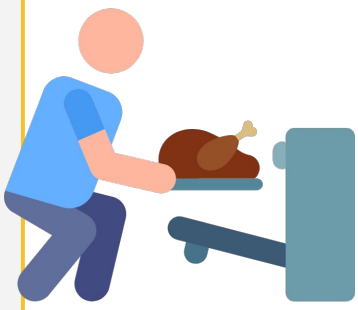
4. **Fifteen-fourths**

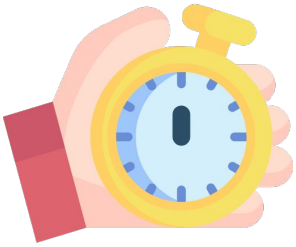
COOKING TIME

Here are the usual number of minutes to cook a particular dish. Solve the following related problems.

1. Chicken stroganoff is usually being cooked for 23 mins. How many servings can be made in two hours?

2. A roasted chicken needs 45 minutes to get ready. How many orders of it can be done in three and a half hours?





3. A 16-pound brisket is cooked at 275 degrees Fahrenheit will take between 10 and 12 hours. How many of it can be made in four days?

CROWD'S FAVORITE

Look at this crowd's favorite dishes. Have a taste by solving the following problems.

1. Chef Jim needs to prepare 85 servings of spicy shrimp pasta. Each serving should contain ⅔ pound of shrimp. How many pounds does he need in all? Are 50 pounds enough? Why or why not?

2. As a crowd favorite, HWM Restaurant received 25 orders of ribeye steak. There are only 364 g of butter available. How much butter should each steak be shared equally? Can a steak have at least 15 g of butter each? Why or why not?

THE KITCHEN CREW

The kitchen crew work so hard today! Give them a day-off by answering the following problems.

1. A round table has a capacity of 6 customers. How many tables are needed if there are 125 customers?

2. A group of friends bought 2 boxes of hawaiian pizza. Each box has 8 slices. If there are 10 people to eat, how many should each person get?

3. If 6 people want to share 8 sacks of rice equally, how many sacks of rice should each person get?

4. A chef has one hour to cook seven dishes. How many minutes will it take to prepare each food equally?

ITADAKIMASU

Let's enjoy our food as we answer the following correctly.

1. A box of cereals is to be shared by seven children. Illustrate their share using fraction model.

2. A newly-baked red velvet cake is to be enjoyed by five people. Illustrate using fraction model the share of each person.

FOOD FOR THOUGHT

After enjoying amazing foods, it is now time to reflect on the following questions. Write your answers on the space provided.

1. Can you now explain that fractions represent division? How?

_____

_____

_____

_____

_____

2. Can you now solve word problems that involve division of whole numbers and interpret the quotient in the context of the problem? How?

_____

_____

_____

_____

3. Can you now explain or illustrate your solution using visual fraction models or equations? How do you say so?

_____

_____

ANSWER GUIDE

Activity 1

1. 19/2	2. 20	3. 15/2	4. 95/7
5. 175/6	6. 22/3	7. 64/15	8. 44/5

Activity 2

1. 7 ½	2. 5 ½	3. 6 ⅔	4. 38 ⅓	5. 55 5/9

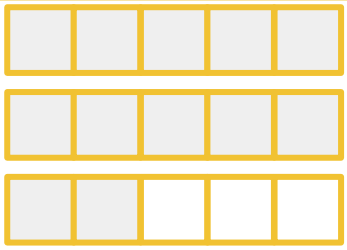
Activity 3

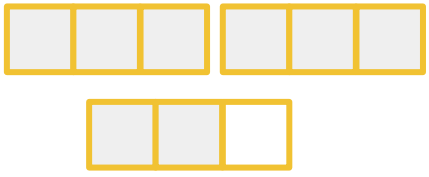
1. FALSE	2. FALSE	3. FALSE	4. TRUE	5. FALSE

Activity 4

1. 16 ⅔	2. 18	3. 7 ⅕	4. 41 ½
5. 46 ½	6. 59	7. 32	8. 20 ⅙

Activity 5

1. 

2. 

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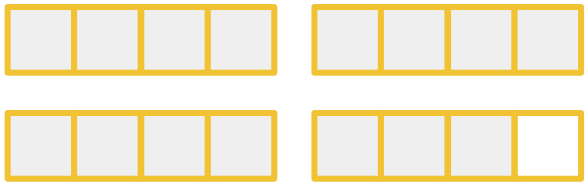
4. 

ANSWER GUIDE

Activity 6

1. 5 5/23 servings 2. 4 ⅔ orders 3. More or less 8 servings

Activity 7

1. 56 ⅔ pounds of shrimp. No. 50 is not enough enough because Chef Jim needs 56 ⅔ pounds.
2. 14 14/25 g of butter. No, because each should use less than 15 g.

Activity 8

1. 21 tables 2. 1 ⅗ 3. 1 ⅓ sacks 4. 8 4/7 minutes

Activity 9

1. Each child will have 1/7 part of the cake.
2. Each person will enjoy ⅕ part of the cake.

Activity 10

Answers may vary.

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