

Name _____

Adding Fractions with Unlike Denominators

NTI Dec 5

Danisha ate $\frac{2}{3}$ cup of yogurt at breakfast. She ate $\frac{1}{4}$ cup of yogurt at lunch. How much yogurt did she eat today?

EXAMPLES

S. NF. 1

S. NF. 2

You can add fractions with unlike denominators.

Step 1: Find the least common denominator of the two fractions.

multiples of 3: 3, 6, 9, 12, 15

multiples of 4: 4, 8, 12, 16, 20

$$\frac{2}{3} = \frac{8}{12} \text{ and } \frac{1}{4} = \frac{3}{12}$$

Step 2: Once you have equivalent fractions with the same denominator, add the numerators.

$$8 + 3 = 11$$

$$\text{So, } \frac{8}{12} + \frac{3}{12} = \frac{11}{12}$$

Step 3: Place the sum over the common denominator and simplify your fraction if possible.

Danisha ate $\frac{11}{12}$ cup of yogurt today.

For 1 through 5, find each sum. Simplify if possible.

1.
$$\begin{array}{r} \frac{3}{5} \\ + \frac{1}{6} \\ \hline \end{array}$$

2.
$$\begin{array}{r} \frac{2}{9} \\ + \frac{2}{6} \\ \hline \end{array}$$

3.
$$\begin{array}{r} \frac{3}{8} \\ + \frac{3}{12} \\ \hline \end{array}$$

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

5. $\frac{2}{9} + \frac{1}{9} + \frac{1}{6} =$

6. Kevin and some friends baked different loaves of bread and cut them into different numbers of slices. They ate $\frac{1}{4}$ of one loaf, $\frac{1}{4}$ of another, $\frac{5}{12}$ of another, and $\frac{1}{12}$ of another. Did they eat the equivalent of a whole loaf?

7. Cathy wakes up at 7:00 A.M. each morning. She spends $\frac{1}{10}$ hour making her bed, $\frac{1}{5}$ hour eating breakfast, and $\frac{1}{2}$ hour getting ready for school. How long does Cathy spend doing these things each morning?

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Find each sum. Simplify if necessary.

1. $\frac{2}{9} + \frac{1}{3}$ _____

2. $\frac{1}{7} + \frac{3}{21}$ _____

3. $\frac{2}{3} + \frac{1}{5}$ _____

4. $\frac{1}{4} + \frac{2}{3}$ _____

5. $\frac{1}{12} + \frac{4}{6}$ _____

6. $\frac{1}{2} + \frac{2}{5}$ _____

7. $\frac{1}{6} + \frac{5}{12}$ _____

8. $\frac{4}{6} + \frac{1}{3}$ _____

9. $\frac{1}{5} + \frac{1}{8}$ _____

10. $\frac{3}{4} + \frac{1}{9}$ _____

11. $\frac{6}{12} + \frac{1}{3}$ _____

12. $\frac{4}{8} + \frac{1}{2}$ _____

Jeremy collected nickels for one week. He is making stacks of his nickels to determine how many he has. The thickness of one nickel is $\frac{1}{16}$ inch.

13. How tall is a stack of 16 nickels?

14. What is the combined height of 3 nickels, 2 nickels, and 1 nickel?

15. What is the sum of $\frac{5}{30} + \frac{4}{6}$?

A $\frac{5}{6}$

B $\frac{7}{9}$

C $\frac{2}{3}$

D $\frac{9}{12}$

16. How do you rename $\frac{2}{5}$ so you can add it to $\frac{11}{25}$? What is the sum?

Subtracting Fractions with Unlike Denominators

You can subtract fractions with unlike denominators by using the least common multiple (LCM) and the least common denominator (LCD).

EXAMPLES

Beth wants to exercise for $\frac{4}{5}$ hour. So far, she has exercised $\frac{2}{3}$ hour. What fraction of an hour does she have left to go?

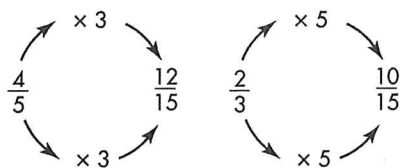
Step 1: Find the LCM of 5 and 3.

multiples of 5: 5, 10, 15, 20

multiples of 3: 3, 6, 9, 12, 15

Since 15 is the LCM, it is also the LCD.

Step 2: Using your LCD, write the equivalent fractions.

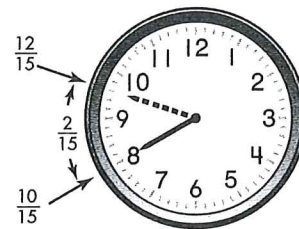


$$\frac{4}{5} = \frac{12}{15} \text{ and}$$

$$\frac{2}{3} = \frac{10}{15}$$

Step 3: Subtract the numerators.

Place the difference over the LCD. Simplify if possible.



$$\frac{12}{15} - \frac{10}{15} = \frac{2}{15}$$

Beth has $\frac{2}{15}$ hour left.

1 through 7, find each difference. Simplify if possible.

1.
$$\begin{array}{r} \frac{3}{4} \\ - \frac{2}{5} \\ \hline \end{array}$$

2.
$$\begin{array}{r} \frac{7}{10} \\ - \frac{1}{5} \\ \hline \end{array}$$

3.
$$\begin{array}{r} \frac{8}{8} \\ - \frac{4}{9} \\ \hline \end{array}$$

4.
$$\begin{array}{r} \frac{17}{18} \\ - \frac{2}{3} \\ \hline \end{array}$$

5. $\frac{7}{12} - \frac{1}{4} = \underline{\hspace{2cm}}$

6. $\frac{5}{6} - \frac{3}{8} = \underline{\hspace{2cm}}$

7. $\frac{23}{24} - \frac{7}{8} = \underline{\hspace{2cm}}$

8. Natasha had $\frac{7}{8}$ gallon of paint. Her brother Ivan took $\frac{1}{4}$ gallon to paint his model boat. Natasha needs at least $\frac{1}{2}$ gallon to paint her bookshelf. Did Ivan leave her enough paint?

Name _____

Subtracting Fractions with Unlike Denominators

Find the difference. Simplify if necessary.

1. $\frac{10}{12} - \frac{1}{4}$ _____

2. $\frac{9}{10} - \frac{3}{5}$ _____

3. $\frac{7}{8} - \frac{2}{6}$ _____

4. $\frac{7}{12} - \frac{1}{4}$ _____

5. $\frac{4}{5} - \frac{1}{3}$ _____

6. $\frac{2}{3} - \frac{1}{6}$ _____

7. $\frac{4}{8} - \frac{1}{4}$ _____

8. $\frac{4}{10} - \frac{1}{5}$ _____

9. $\frac{9}{9} - \frac{2}{3}$ _____

10. $\frac{9}{15} - \frac{1}{3}$ _____

11. $\frac{4}{12} - \frac{1}{6}$ _____

12. $\frac{14}{20} - \frac{3}{5}$ _____

13. The pet shop owner told Jean to fill her new fish tank $\frac{3}{4}$ full with water. Jean filled it $\frac{9}{12}$ full. What fraction of the tank does Jean still need to fill? _____

14. Paul's dad made a turkey potpie for dinner on Wednesday. The family ate $\frac{4}{8}$ of the pie. On Thursday after school, Paul ate $\frac{2}{16}$ of the pie for a snack. What fraction of the pie remained? _____

15. Gracie read 150 pages of a book. The book is 227 pages long. Which equation shows the amount she still needs to read to finish the story?

A $150 - n = 227$

C $n - 150 = 227$

B $227 + 150 = n$

D $n + 150 = 227$

16. Why do fractions need to have a common denominator before you add or subtract them?

Green Roofs

NTI Day 5
RL.5.1

Have you ever seen a rooftop garden?

1 Why would anyone want to plant a garden on a roof? People are finding out that it is good for the environment and good for them. The roof of a building can get extremely hot, especially if it is covered in tar. Dark colors absorb the light of the sun, which causes them to become hotter than things that are light in color.

2 Cities can be as much as four to ten degrees warmer than rural areas. Green rooftops can actually help cool the air in cities. A single green roof will not do much to change the temperature of a city. However, when more buildings begin to convert their rooftops to green spaces, a real difference can occur. Buildings that are cooler also use air conditioning less often. This reduces the amount of energy a building uses, which is good for the environment.



3 Cities are usually more polluted than other areas. The addition of plants to rooftops can even help clean the air. Plants use carbon dioxide and produce oxygen. Because people breathe oxygen, a large number of plants in an area creates more breathable air. Gardens in the city can also provide a place for birds and bugs to live.

4 One unusual rooftop garden is located above Children's Hospital in St. Louis, Missouri. The garden covers an area of 7,500 square feet. It is a place for the children and their parents to relax and be close to nature without leaving the hospital. The garden has flowers, fountains, and even a goldfish pond. There are also paths that children can walk on in slippers or with bare feet.

5 Another interesting garden is on the rooftop of the Royal York Hotel in Toronto, Canada. A large herb garden has been planted on the roof. The hotel's chefs can pick all of the herbs they use fresh from the roof. Other hotels and restaurants maintain gardens where they grow fruits and vegetables to use in cooking. They just need to make sure that there are gardeners to care for the plants. Rooftop gardens can dry out quickly in the summer sun, and vegetables need frequent watering.

6 Why don't all buildings have green rooftops? One reason is that they can be more expensive than traditional rooftops. However, they may save a company on heating and cooling bills in the future. Also, a roof needs to be flat and strong enough to support the weight of the garden.

7 Many people do not know about rooftop gardens and how good they can be for the environment. But word is starting to get out. You may want to keep your eyes on the skies when you walk the streets in your town or city. You never know when you might catch a glimpse of a secret garden many feet above the ground.

Vocabulary Skills

Write the words from the passage that have the meanings below.

1. take in or soak up

_____ Par. 1

2. related to life in the country

_____ Par. 2

3. change from one thing to another

_____ Par. 2

4. makes less

_____ Par. 2

5. a quick look

_____ Par. 7

Write a compound word using two words in each sentence.

6. The pond contains fish that have a gold color.

7. The garden is located on the top of the roof.

8. A house for a bird can be placed in the garden.

Reading Skills

1. Why do the rooftops of buildings get so hot?

2. How big is the rooftop garden at the Children's Hospital in St. Louis, Missouri?

3. Do you think that more buildings will begin to convert their roofs to green spaces? Explain your answer.

4. What is planted in the rooftop garden of the Royal York Hotel?

5. A **summary** is a short sentence that tells the most important facts about a topic. Check the sentence below that is the best summary for paragraph 2.

_____ Cities are warmer than rural areas.

_____ Rooftop gardens can cool the air in cities and reduce the amount of energy used.

_____ Buildings with rooftop gardens use less air conditioning.

Study Skills

An **outline** is used to put ideas in order. It shows the important facts in a story. Use the facts from paragraph 2 to complete Part I. Use the facts from paragraph 4 to complete Part II.

- I. Often warmer in the city than in the country

A. green roofs help cool air

B. _____

C. reduces energy buildings use

- II. Rooftop garden at Children's Hospital in St. Louis

A. 7,500 square feet

B. _____

C. has flowers, fountains, and pond

D. _____

Name _____

Date _____

When Cortés arrived in Tenochtitlán, Motecuhzoma welcomed him with a great feast. After the meal a chocolate drink was served in gold cups. It was cold and bitter and had a peppery taste. Cortés did not like it much, but he was fascinated by the fuss the Aztecs made over it.

What Cortés did not know, but would soon find out, was that the Aztecs believed chocolate was a gift from the god Quetzalcoatl. Those who drank it were supposed to gain wisdom and strength. For that reason, only rulers and soldiers were allowed to have it. Motecuhzoma drank 50 cups of it a day!

The Aztecs made chocolate from cocoa beans, just as we do today. But for the Aztecs, cocoa beans were important for another reason. The Aztecs used them as money. A rabbit, for example, cost 10 cocoa beans, while an enslaved person cost 100.

It did not take long for Cortés to figure out that he could make money by growing and selling cocoa beans. He had them planted all over Central America and later in Africa. He also took some with him when he went home to Spain.

The Spanish did not like

chocolate at first. Then they added sugar to the drink. After that, it became so popular that the Spanish tried to keep it a secret. They succeeded for almost 100 years. But, little by little, word got out.

Over the years members of Spain's royal family married *monarchs* from other European countries. The kings and queens shared the sweet secret among themselves. By the middle of the seventeenth century, hot chocolate had become Europe's favorite drink. And chocolate houses replaced coffee shops as a popular place for social gatherings and business meetings.

The STORY of CHOCOLATE

It took another 200 years, however, for someone to figure out that if chocolate was so good to drink, it would also be good to eat. The British claim credit for that discovery, and they deserve it. It was the British firm of Fry & Sons that made the first "eating chocolate" in 1847.

The rest is history. Chocolate candy seemed to satisfy the sweet tooth as no other candy could. It became a best-seller in Britain and soon spread to the rest of the world. Today, there are chocolate fans everywhere!



Name _____ Date _____

The Story of Chocolate**Choose the best answer and mark the letter of your choice.**

1. What is this article mostly about?
 - A. how chocolate spread around the world
 - B. how chocolate is created from cocoa beans
 - C. what makes chocolate popular all over the world
 - D. Cortés and his first encounter with the Aztecs

2. What did the Aztecs believe chocolate would give them?
 - F. new rulers
 - G. wisdom and strength
 - H. long life
 - J. wealth and power

3. According to the article, which of these happened first?
 - A. Cortés brought cocoa beans to Spain.
 - B. Cortés learned about chocolate from the Aztecs.
 - C. The Spanish added sugar to chocolate.
 - D. Chocolate became popular in Europe.


4. Cortés planted cocoa beans because
 - F. he had grown to like the taste of chocolate.
 - G. the king of Spain requested it.
 - H. he wanted to become a farmer.
 - J. he thought he could make money by selling the beans.

5. In this article, the word *monarchs* means
 - A. chocolate makers.
 - B. rich people.
 - C. kings and queens.
 - D. lords and ladies.

6. The first “eating chocolate” was made
 - F. by the Aztecs.
 - G. by Cortés.
 - H. by the British.
 - J. by the Spanish.

7. Which of these is a fact presented in the article?
 - A. Chocolate is the world’s oldest candy.
 - B. Everyone likes chocolate.
 - C. Chocolate is better to eat than to drink.
 - D. Chocolate is a popular candy.

8. The article gives you enough information to predict that chocolate will probably
 - F. be cheaper in the future.
 - G. continue to be popular in the future.
 - H. be more expensive in the future.
 - J. taste better in the future.

I  you a question!

Should Students be paid to do well in school?

Your Local school board is thinking about ways to reward students who stay out of trouble and make good grades. One member mentioned paying students money for doing well in school. Write your school board and explain to them if you think this is a good idea or not.

Introduction:

Address the Audience and Restate the Situation/Topic.

State your Opinion: Be sure to start Opinion Statement the right way!

List three reasons to support your opinion. Do not forget your commas!!!

Put a Hook on it! Ask your Audience a MEANINGFUL QUESTION:

Reason 1:

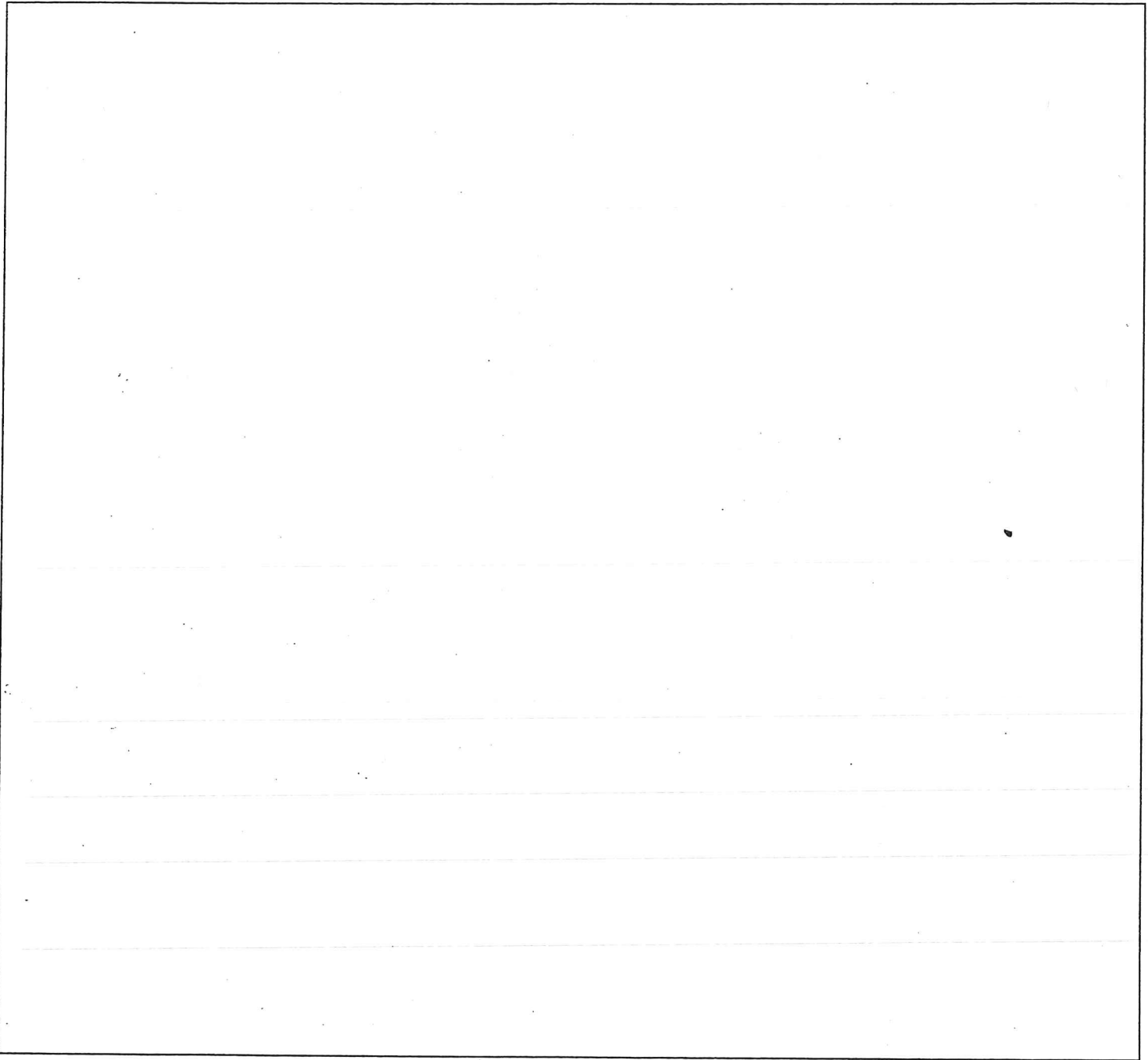
The first reason from your Introduction paragraph. (Transitions: First, Initial, to start with)

Example/Detail #1: Transitions: For example, for instance, In fact, Specifically

Example/Detail #2: Transitions: Another example, additionally

Study or Survey: According to the University of Kentucky.... Include a percentage or ratio.

Emphasis is the effect created when one element is given more importance than another in artwork. Remember emphasis catches the viewer's attention. You may make an area stand out by using different sizes, colors, or shapes. Use emphasis to create a composition in space provided below.



Which part or parts of the subject are emphasized in your composition? _____

What was the most difficult part about creating your picture? Why? _____