

Extra Practice 1A**Lesson 5.1: Using Models to Add Fractions**

1. Sketch circles to show each sum.

Write an addition equation for each picture.

a) $\frac{1}{4} + \frac{1}{4}$ b) $\frac{2}{3} + \frac{2}{3}$ c) $\frac{3}{8} + \frac{1}{2}$

2. Sketch circles to show each sum.

Write an addition equation for each picture.

a) $\frac{1}{4} + \frac{1}{8}$ b) $\frac{1}{3} + \frac{5}{6}$ c) $\frac{3}{4} + \frac{5}{8}$

3. Is each sum greater than 1 or less than 1?

How can you tell?

a) $\frac{3}{5} + \frac{1}{5}$ b) $\frac{3}{10} + \frac{9}{10}$ c) $\frac{2}{7} + \frac{3}{7}$ d) $\frac{9}{8} + \frac{3}{8}$

4. Terry spent Monday and Tuesday practising for a talent show.

He recorded the amount of time he spent on each activity as a fraction of one hour.

- a) Calculate how much time Terry spent practising each activity over the two days.

Record each answer as a fraction of one hour.

- b) How many minutes did he spend on each activity?

- c) How much time did he spend practising over the two days?

Write your answer in 2 different ways.

Activity	Monday	Tuesday
Dancing	$\frac{1}{2}$ h	$\frac{1}{4}$ h
Singing	$\frac{2}{3}$ h	$\frac{2}{3}$ h
Keyboard	$\frac{1}{2}$ h	$\frac{5}{6}$ h

Extra Practice 2A**Lesson 5.2: Using Other Models to Add Fractions**

1. Add.

a) $\frac{2}{5} + \frac{1}{5}$ b) $\frac{3}{7} + \frac{2}{7}$ c) $\frac{3}{10} + \frac{1}{10}$ d) $\frac{3}{6} + \frac{3}{6}$

2. Use fraction strips and number lines to find each sum.

a) $\frac{2}{3} + \frac{1}{6}$ b) $\frac{3}{10} + \frac{1}{5}$ c) $\frac{3}{4} + \frac{1}{8}$ d) $\frac{1}{3} + \frac{1}{6}$

3. Use fraction strips and number lines to find each sum.

a) $\frac{1}{5} + \frac{1}{2}$ b) $\frac{1}{8} + \frac{1}{4}$ c) $\frac{1}{4} + \frac{1}{3}$ d) $\frac{1}{6} + \frac{5}{12}$

4. Replace each \square with a digit to make each equation true.

a) $\frac{1}{4} + \frac{3}{8} = \frac{\square}{8}$ b) $\frac{1}{\square} + \frac{5}{6} = \frac{11}{12}$ c) $\frac{\square}{8} + \frac{1}{8} = 1$ d) $\frac{1}{3} + \frac{3}{4} = \frac{13}{\square}$

5. Kate and Joe are making smoothies.

They put $\frac{1}{8}$ cup of honey, $\frac{1}{4}$ cup of yogurt, $\frac{5}{8}$ cup of milk,
and $\frac{5}{4}$ cup of juice in the blender.

They want to pour the smoothies into glasses that each hold one cup of liquid.
Do they need 2 glasses or 3?
How do you know?

6. Find two fractions that have a sum of $\frac{7}{12}$.

How many pairs of fractions can you find?
Record each pair you find.

7. Kerry and Lee are doing paper crafts.

Each one starts with one large square of paper.

Kerry leaves $\frac{1}{4}$ of his paper.

Lee leaves $\frac{3}{8}$ of his paper.

How much paper is left altogether?

Extra Practice 3A**Lesson 5.3: Using Symbols to Add Fractions**

- Find a common denominator for each pair of fractions.
 a) $\frac{1}{3}$ and $\frac{1}{2}$ b) $\frac{1}{5}$ and $\frac{3}{10}$ c) $\frac{2}{3}$ and $\frac{5}{4}$ d) $\frac{7}{5}$ and $\frac{2}{3}$
- Add. Estimate first.
 a) $\frac{1}{2} + \frac{2}{3}$ b) $\frac{3}{8} + \frac{1}{3}$ c) $\frac{1}{10} + \frac{2}{3}$ d) $\frac{1}{6} + \frac{3}{5}$
- Add. Estimate first.
 a) $\frac{3}{4} + \frac{5}{8}$ b) $\frac{7}{6} + \frac{1}{4}$ c) $\frac{3}{10} + \frac{3}{5}$ d) $\frac{9}{10} + \frac{4}{5}$
- Add. Estimate first.
 a) $\frac{1}{3} + \frac{2}{5}$ b) $\frac{1}{5} + \frac{7}{6}$ c) $\frac{5}{9} + \frac{5}{6}$ d) $\frac{3}{2} + \frac{3}{12}$
- These are fractions of grade 9 students who reported summer jobs.

Lawn Mower	Baby-sitter	Shop Clerk	Waiter/ Waitress	Gardener	Day Care Helper
$\frac{1}{9}$	$\frac{1}{4}$	$\frac{1}{6}$	$\frac{1}{3}$	$\frac{1}{12}$	$\frac{1}{18}$

Calculate the fraction of students:

- with outdoor jobs
 - with jobs involving children
 - with jobs involving customers
6. Which sum is greater?
 How do you know?
 $\frac{3}{4} + \frac{5}{8}$ or $\frac{7}{8} + \frac{1}{3}$

Extra Practice 4A**Lesson 5.4: Using Models to Subtract Fractions**

1. Subtract.

a) $\frac{7}{8} - \frac{3}{8}$

b) $\frac{4}{6} - \frac{1}{6}$

c) $\frac{9}{12} - \frac{7}{12}$

d) $\frac{8}{10} - \frac{3}{10}$

2. Subtract.

Estimate first.

Sketch pictures to show each difference.

a) $\frac{7}{8} - \frac{1}{4}$

b) $\frac{5}{12} - \frac{1}{4}$

c) $\frac{6}{5} - \frac{3}{10}$

d) $\frac{12}{5} - \frac{1}{10}$

3. Subtract.

Estimate first.

a) $\frac{3}{2} - \frac{1}{3}$

b) $\frac{7}{6} - \frac{2}{3}$

c) $\frac{9}{10} - \frac{4}{5}$

d) $\frac{6}{6} - \frac{5}{8}$

4. On Tuesday, Kyle spent his study time as follows:

- $\frac{3}{8}$ of the time on language
- $\frac{1}{6}$ of the time on history
- $\frac{5}{12}$ of the time on math

a) Did Kyle spend more time on language or math?

Explain your thinking.

b) The fourth subject Kyle studied on Tuesday was health.

What fraction of his study time did he spend on health?

5. Ana has $\frac{3}{4}$ of a package of butter.

She needs $\frac{5}{6}$ of a package for the recipe she wants to use.

Explain whether Ana has enough butter or not.

If she needs more, how much more does she need?

Extra Practice 5A**Lesson 5.5: Using Symbols to Subtract Fractions**

1. Subtract.

a) $\frac{7}{8} - \frac{5}{8}$

b) $\frac{9}{10} - \frac{5}{10}$

c) $\frac{5}{12} - \frac{1}{12}$

d) $\frac{6}{7} - \frac{3}{7}$

2. Subtract.

Estimate first.

a) $\frac{5}{6} - \frac{1}{2}$

b) $\frac{8}{9} - \frac{1}{6}$

c) $\frac{7}{8} - \frac{3}{4}$

d) $\frac{3}{2} - \frac{3}{4}$

3. Subtract.

Estimate first.

a) $\frac{4}{5} - \frac{1}{3}$

b) $\frac{7}{5} - \frac{2}{3}$

c) $\frac{5}{4} - \frac{3}{5}$

d) $\frac{4}{3} - \frac{5}{8}$

4. The grade seven's voted for the October dance theme.

$\frac{3}{10}$ voted for a circus theme.

$\frac{2}{5}$ voted for a monster theme.

a) Which theme had more votes?

What fraction more of the class voted for the winning theme?

b) What fraction of the class did not vote for either of these themes?

5. The answer is $\frac{5}{12}$.

What could the question be?

Find at least 3 subtraction equations with this answer.

6. Sylvia and Leslie played together at a lacrosse tournament.

Sylvia played $\frac{5}{6}$ h on Saturday and $\frac{3}{8}$ h on Sunday.

Leslie played $\frac{3}{4}$ h on Saturday and $\frac{5}{8}$ h on Sunday.

a) Who played longer overall?

b) How much longer did this person play?

Extra Practice 6A**Lesson 5.6: Adding with Mixed Numbers**

1. Write each mixed number as an improper fraction in simplest form.

a) $1\frac{3}{5}$ b) $2\frac{5}{8}$ c) $2\frac{2}{3}$ d) $3\frac{4}{9}$

2. Write each improper fraction as a mixed number in simplest form.

a) $\frac{7}{5}$ b) $\frac{15}{10}$ c) $\frac{12}{3}$ d) $\frac{19}{6}$

3. Use Pattern Blocks or fraction circles to find each sum.

a) $1\frac{1}{4} + 2\frac{3}{8}$ b) $2\frac{1}{3} + 1\frac{1}{6}$ c) $2\frac{5}{8} + 1\frac{1}{2}$ d) $1\frac{2}{3} + 2\frac{5}{6}$

4. For each pair of numbers, find a common denominator.
Then add.

a) $2\frac{1}{4} + 1\frac{1}{8}$ b) $1\frac{4}{5} + 2\frac{1}{3}$ c) $2\frac{3}{10} + \frac{2}{3}$ d) $3\frac{7}{8} + 2\frac{3}{4}$

5. We know $\frac{1}{6} + \frac{1}{4} = \frac{5}{12}$.

Use this result to find each sum.

Estimate to check the sum is reasonable.

a) $1\frac{1}{6} + 2\frac{1}{4}$ b) $3\frac{1}{6} + 3\frac{1}{4}$ c) $5\frac{1}{6} + 2\frac{1}{4}$ d) $4\frac{1}{4} + 3\frac{1}{6}$

6. Scott used the computer to research travel destinations.

One evening he spent $\frac{3}{4}$ h.

The next evening he spent $1\frac{1}{5}$ h.

Finally, he spent $1\frac{1}{2}$ h researching.

How much time did he spend researching on the computer?

Extra Practice 7A**Lesson 5.7: Subtracting with Mixed Numbers**

- Subtract the fractions and the whole numbers separately.
 - $3\frac{4}{5} - 1\frac{3}{5}$
 - $7\frac{5}{6} - 4\frac{5}{6}$
 - $5\frac{9}{10} - 2\frac{5}{10}$
 - $12\frac{7}{8} - \frac{3}{8}$
- Estimate, then subtract.
 - $5\frac{5}{6} - 3\frac{1}{3}$
 - $10\frac{3}{8} - 4\frac{3}{4}$
 - $5\frac{7}{12} - 2\frac{3}{8}$
 - $2\frac{1}{3} - \frac{1}{2}$
- Subtract.
 - $6 - \frac{5}{7}$
 - $8 - \frac{3}{4}$
 - $5 - \frac{3}{10}$
 - $10 - \frac{7}{8}$
- Subtract.
 - $2\frac{5}{6} - 1\frac{1}{2}$
 - $4\frac{3}{8} - \frac{3}{4}$
 - $7 - 5\frac{1}{8}$
 - $18\frac{1}{3} - 5\frac{2}{3}$
- Marnie is training for a triathlon.
She trained for $2\frac{1}{2}$ h on Monday, $1\frac{3}{4}$ h on Wednesday, and $2\frac{1}{4}$ h on Thursday.
 - How much time did she spend training so far?
 - Marnie wants to train for 12 h each week.
How much more time will she spend training this week?
- Two schools held a car washing competition to raise money for charity.
Rockyview School used up $5\frac{3}{4}$ containers of carwash.
Plainmeadows School used $6\frac{1}{8}$ containers of carwash.
 - How many containers of carwash were used altogether?
 - The two schools had purchased 12 containers of carwash.
How many containers were left?

Extra Practice Sample Answers

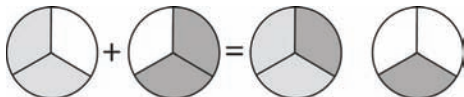
Extra Practice 1A

Lesson 5.1

1. a) $\frac{1}{4} + \frac{1}{4} = \frac{1}{2}$



b) $\frac{2}{3} + \frac{2}{3} = 1\frac{1}{3}$



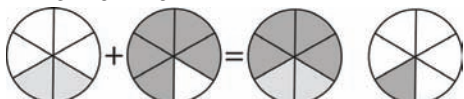
c) $\frac{3}{8} + \frac{1}{2} = \frac{7}{8}$



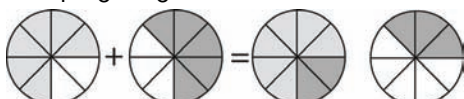
2. a) $\frac{1}{4} + \frac{1}{8} = \frac{3}{8}$



b) $\frac{1}{3} + \frac{5}{6} = 1\frac{1}{6}$



c) $\frac{3}{4} + \frac{5}{8} = 1\frac{3}{8}$



3. a) Less than 1: $\frac{3}{5}$ is $\frac{1}{10}$ greater than $\frac{1}{2}$. $\frac{1}{5}$ is $\frac{3}{10}$ less than $\frac{1}{2}$.

So, $\frac{3}{5} + \frac{1}{5}$ will be $\frac{1}{5}$ less than 1.

b) Greater than 1: $\frac{9}{10}$ is $\frac{2}{5}$ greater than $\frac{1}{2}$. $\frac{3}{10}$ is $\frac{1}{5}$ less than $\frac{1}{2}$.

So, $\frac{3}{10} + \frac{9}{10}$ will be $\frac{1}{5}$ greater than 1.

c) Less than 1: $\frac{2}{7} < \frac{1}{2}$ and $\frac{3}{7} < \frac{1}{2}$.

So, $\frac{2}{7} + \frac{3}{7} < \frac{1}{2} + \frac{1}{2} = 1$

d) Greater than 1: $\frac{9}{8}$ is already greater than 1.

4. a) Dancing: $\frac{3}{4}$ h Singing: $1\frac{1}{3}$ h Keyboard: $1\frac{1}{3}$ h

b) Dancing: 45 min Singing: 80 min Keyboard: 80 min

c) 205 min, $3\frac{5}{12}$ h

Extra Practice 2A

Lesson 5.2

- a) $\frac{3}{5}$ b) $\frac{5}{7}$ c) $\frac{4}{10} = \frac{2}{5}$ d) $\frac{6}{6} = 1$
- a) $\frac{5}{6}$ b) $\frac{5}{10} = \frac{1}{2}$ c) $\frac{7}{8}$ d) $\frac{3}{6} = \frac{1}{2}$
- a) $\frac{7}{10}$ b) $\frac{3}{8}$ c) $\frac{7}{12}$ d) $\frac{7}{12}$
- a) 5 b) 12 c) 7 d) 12
- 3 glasses: $\frac{1}{8} + \frac{5}{4} + \frac{5}{8} + \frac{1}{4} = 2\frac{1}{4}$

There is more than 2 cups worth of ingredients, so 3 cups are required.

6. Answers may vary. For example:

$$\frac{1}{12} + \frac{1}{2}, \frac{1}{6} + \frac{5}{12}, \frac{1}{3} + \frac{1}{4}$$

7. $\frac{1}{4} + \frac{3}{8} = \frac{5}{8}$

There is $\frac{5}{8}$ of a piece of paper left.

Extra Practice 3A

Lesson 5.3

- a) sixths b) tenths c) twelfths d) fifteenths
- a) About 1; $1\frac{1}{6}$ b) About $1\frac{1}{2}, \frac{17}{24}$ c) About 1; $\frac{23}{30}$ d) About 1; $\frac{23}{30}$
- a) About $1\frac{1}{2}, 1\frac{3}{8}$ b) About $1\frac{1}{2}, 1\frac{5}{12}$ c) About 1; $\frac{9}{10}$ d) About $1\frac{1}{2}, 1\frac{7}{10}$
- a) About 1; $\frac{11}{15}$ b) About $1\frac{1}{2}, 1\frac{11}{30}$ c) About $1\frac{1}{2}, 1\frac{7}{18}$ d) About 2; $1\frac{3}{4}$
- a) $\frac{7}{36}$ b) $\frac{11}{36}$ c) $\frac{1}{2}$
- $\frac{3}{4} + \frac{5}{8} = 1\frac{3}{8} = 1\frac{9}{24} > \frac{7}{8} + \frac{1}{3} = 1\frac{5}{24}$

So, the first sum is greater.

Extra Practice 4A

Lesson 5.4

1. a) $\frac{1}{2}$ b) $\frac{1}{2}$ c) $\frac{1}{6}$ d) $\frac{1}{2}$

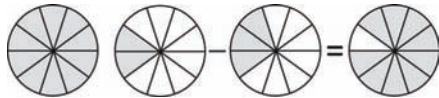
2. a) About $1\frac{1}{2}, \frac{5}{8}$



- b) About $\frac{1}{4}, \frac{1}{6}$



- c) About $1, \frac{9}{10}$



d) About 2, $2\frac{3}{10}$



3. a) About $1\frac{1}{4}$, $1\frac{1}{6}$ b) About $\frac{1}{2}$, $\frac{1}{2}$

c) About 0, $\frac{1}{10}$ d) About $\frac{1}{4}$, $\frac{3}{8}$

4. a) Kyle spent more time on math.
 $\frac{5}{12} = \frac{10}{24} > \frac{9}{24} = \frac{3}{8}$

b) Kyle spent $\frac{1}{24}$ of his study time on health.

5. $\frac{3}{4} = \frac{9}{12} < \frac{10}{12} = \frac{5}{6}$

Ana does not have enough butter for her recipe.

She needs another $\frac{1}{12}$ of a package.

Extra Practice 5A

Lesson 5.5

1. a) $\frac{1}{4}$ b) $\frac{2}{5}$ c) $\frac{1}{3}$ d) $\frac{3}{7}$

2. a) About $\frac{1}{2}$, $\frac{1}{3}$ b) About $\frac{3}{4}$, $\frac{13}{18}$

c) About 0, $\frac{1}{8}$ d) About $\frac{3}{4}$, $\frac{3}{4}$

3. a) About $\frac{1}{2}$, $\frac{7}{15}$ b) About $\frac{3}{4}$, $\frac{11}{15}$

c) About $\frac{1}{2}$, $\frac{13}{20}$ d) About $\frac{3}{4}$, $\frac{17}{24}$

4. a) $\frac{2}{5} = \frac{4}{10} > \frac{3}{10}$

More students voted for the monster theme than for the circus theme.

$\frac{1}{10}$ more of the class voted for the monster theme than for the circus theme.

b) $\frac{3}{10}$ of the class did not vote for either the monster or circus themes.

5. Answers will vary. For example: $1 - \frac{7}{12}$, $\frac{5}{6} - \frac{5}{12}$, $\frac{7}{12} - \frac{1}{6}$.

6. a) Leslie played longer overall.

b) Leslie played $\frac{1}{6}$ h longer than Sylvia.

Extra Practice 6A

Lesson 5.6

1. a) $\frac{8}{5}$ b) $\frac{21}{8}$ c) $\frac{8}{3}$ d) $\frac{31}{9}$

2. a) $1\frac{2}{5}$ b) $1\frac{1}{2}$ c) 4 d) $3\frac{1}{6}$

3. a) $3\frac{5}{8}$ b) $3\frac{1}{2}$ c) $4\frac{1}{8}$ d) $4\frac{1}{2}$

4. a) Eighths; $3\frac{3}{8}$ b) Fifteenths; $4\frac{2}{15}$

c) Thirtieths; $2\frac{29}{30}$ d) Eighths; $6\frac{5}{8}$

5. a) $3\frac{5}{12}$ b) $6\frac{5}{12}$ c) $7\frac{5}{12}$ d) $7\frac{5}{12}$
6. $3\frac{9}{20}$ h

Scott spent 3 h and 27 min researching on his computer.

Extra Practice 7A

Lesson 5.7

1. a) $2\frac{1}{5}$ b) 3 c) $3\frac{2}{5}$ d) $12\frac{1}{2}$
2. a) About $2\frac{1}{2}$; $2\frac{1}{2}$ b) About $5\frac{1}{2}$; $5\frac{5}{8}$
c) About $3\frac{1}{4}$; $3\frac{5}{24}$ d) About 2; $1\frac{5}{6}$
3. a) $5\frac{2}{7}$ b) $7\frac{1}{4}$ c) $4\frac{7}{10}$ d) $9\frac{1}{8}$
4. a) $1\frac{1}{3}$ b) $3\frac{5}{8}$ c) $1\frac{7}{8}$ d) $12\frac{2}{3}$
5. a) Marnie has spent $6\frac{1}{2}$ h training so far.
b) Marnie will train another $5\frac{1}{2}$ h this week.
6. a) A total of $11\frac{7}{8}$ containers of carwash were used.
b) There is $\frac{1}{8}$ of a container of carwash left.