Objectives:

- Students will memorize the multiplication table, as evidenced by them passing "minute quizzes."
- Students will find the prime factorization of whole numbers, as evidenced by them completing a warm-up worksheet where they do so.
- Students will simplify fractions, as evidenced by them completing a homework assignment where they do so.

Student Materials on Desk Corner:

- Homework #2-5
- Homework Checker
- Readiness Checker

Student Materials for Class:

- Homework Log
- Binder Paper
- Pencils

Teacher Materials:

- "Warm-up 2-6" for each student
- "Minute Quiz 2-6" for each student
- "Homework #2-5" answer key and grading roster for TA
- "Homework #2-6" handout for each student

Homework:

- Homework #2-6

Time	Activity
Before Bell	**DO NOW** As students enter the classroom, shake hands and give them a copy of the **warm-up**. Remind students that there is a minute quiz, so students need to be seated quietly with a pencil when the bell rings.
5 min	**MINUTE QUIZ, HOMEWORK COLLECTION, AND WARM-UP** **Minute Quiz** When the bell rings, quickly go around and put the **minute quiz** on each student's desk, facedown. Then, start everyone on the quiz at the same time and give everyone one minute. While students are working on the quiz, stamp the **readiness checkers** of students who were ready when the bell rang and had their readiness checkers out. **Homework Collection** Instruct the TA go around and collect **homework** and stamp **homework checkers**. Give the TA the answer key and have him or her grade the homework that was collected. **Warm-up** After the minute quiz, students should work on the **warm-up** while you take **attendance**.
30 min	**LESSON: SIMPLIFYING FRACTIONS** **Notes** Follow the handwritten Cornell Notes. **Homework** Pass out the ""Homework #2-6" handout and have students write down the assignment on their homework logs.
45 min	**ALEKS** Students should continue with **ALEKS**. Use this student work time to **return graded homework**.

Numeracy
Minute Quiz 2-6 A

Name:
Date: Period:

Solve the following multiplication problems. You have exactly one minute!

11 • 2 =	9 • 7 =	4 • 3 =
3 • 12 =	11 • 2 =	10 • 5 =
5 • 2 =	1 • 10 =	9 • 1 =
1 • 6 =	8 • 7 =	9 • 3 =

Numeracy
Minute Quiz 2-6 A

Name:
Date: Period:

Solve the following multiplication problems. You have exactly one minute!

11 • 2 =	9 • 7 =	4 • 3 =
3 • 12 =	11 • 2 =	10 • 5 =
5 • 2 =	1 • 10 =	9 • 1 =
1 • 6 =	8 • 7 =	9 • 3 =

Numeracy
Minute Quiz 2-6 A

Name:
Date: Period:

Solve the following multiplication problems. You have exactly one minute!

11 • 2 =	9 • 7 =	4 • 3 =
3 • 12 =	11 • 2 =	10 • 5 =
5 • 2 =	1 • 10 =	9 • 1 =
1 • 6 =	8 • 7 =	9 • 3 =

Numeracy
Minute Quiz 2-6 B

Name:
Date: Period:

Solve the following multiplication problems. You have exactly one minute!

2 • 6 =	3 • 11 =	3 • 11 =
6 • 1 =	5 • 5 =	11 • 5 =
9 • 9 =	7 • 2 =	4 • 1 =
10 • 7 =	9 • 1 =	12 • 11 =

Numeracy
Minute Quiz 2-6 B

Name:
Date: Period:

Solve the following multiplication problems. You have exactly one minute!

2 • 6 =	3 • 11 =	3 • 11 =
6 • 1 =	5 • 5 =	11 • 5 =
9 • 9 =	7 • 2 =	4 • 1 =
10 • 7 =	9 • 1 =	12 • 11 =

Numeracy
Minute Quiz 2-6 B

Name:
Date: Period:

Solve the following multiplication problems. You have exactly one minute!

2 • 6 =	3 • 11 =	3 • 11 =
6 • 1 =	5 • 5 =	11 • 5 =
9 • 9 =	7 • 2 =	4 • 1 =
10 • 7 =	9 • 1 =	12 • 11 =

Numeracy
Minute Quiz 2-6 C

Name:
Date: Period:

Solve the following multiplication problems. You have exactly one minute!

6 • 2 =	9 • 4 =	6 • 8 =
5 • 6 =	11 • 9 =	5 • 12 =
4 • 8 =	7 • 12 =	6 • 9 =
8 • 12 =	1 • 5 =	6 • 1 =

Numeracy
Minute Quiz 2-6 C

Name:
Date: Period:

Solve the following multiplication problems. You have exactly one minute!

6 • 2 =	9 • 4 =	6 • 8 =
5 • 6 =	11 • 9 =	5 • 12 =
4 • 8 =	7 • 12 =	6 • 9 =
8 • 12 =	1 • 5 =	6 • 1 =

Numeracy
Minute Quiz 2-6 C

Name:
Date: Period:

Solve the following multiplication problems. You have exactly one minute!

6 • 2 =	9 • 4 =	6 • 8 =
5 • 6 =	11 • 9 =	5 • 12 =
4 • 8 =	7 • 12 =	6 • 9 =
8 • 12 =	1 • 5 =	6 • 1 =

Numeracy
Warm-up 2-6

Name:
Date: Period:

Find the prime factorization of the following whole numbers.

1) 36 2) 24 3) 56 4) 18

5) 144 6) 26 7) 78 8) 57

Numeracy
Warm-up 2-6

Name:
Date: Period:

Find the prime factorization of the following whole numbers.

1) 36 2) 24 3) 56 4) 18

5) 144 6) 26 7) 78 8) 57

Lesson 2-6
Numeracy

Tom Wong
10/24/08

Simplifying Fractions

Section → **Review of Equivalent Fractions**

Recall we find equivalent fractions using the following important rule:

finding equivalent fractions

★ When you multiply or divide both the top and bottom of a fraction by the same number, the fraction stays the same.

Ex: Start with $\frac{12}{16}$.

a) Divide top & bottom by 2 to find an equivalent fraction.

$$\frac{12}{16} = \frac{12 \div 2}{16 \div 2} = \frac{6}{8}$$

b) Divide top & bottom by 4 to find an equivalent fraction.

$$\frac{12}{16} = \frac{12 \div 4}{16 \div 4} = \frac{3}{4}$$

So, $\frac{12}{16} = \frac{6}{8} = \frac{3}{4}$. That is, they are equivalent.

Section → **Simplifying Fractions**

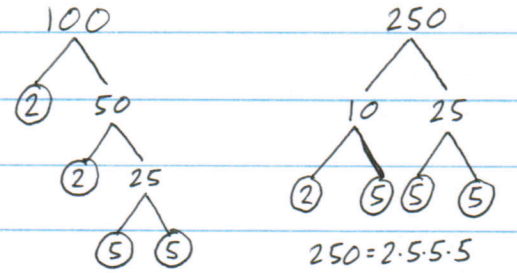
simplest fraction

In the previous example, $\frac{3}{4}$ is the simplest fraction because it has the smallest numbers. So, $\frac{3}{4}$ is the simplified form of $\frac{12}{16}$.

how to simplify fractions

To simplify a fraction, we find the prime factorization of the top and bottom numbers and then "cancel" the numbers that appear in both.

Ex: Simplify $\frac{100}{250}$.



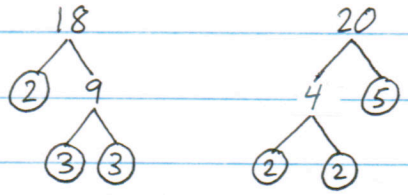
$100 = 2 \cdot 2 \cdot 5 \cdot 5$

$250 = 2 \cdot 5 \cdot 5 \cdot 5$

$$\frac{100}{250} = \frac{2 \cdot 2 \cdot 5 \cdot 5}{2 \cdot 5 \cdot 5 \cdot 5} = \frac{2}{5}$$

↑ this is much simpler than $\frac{100}{250}$.

Ex: Simplify $\frac{18}{20}$.



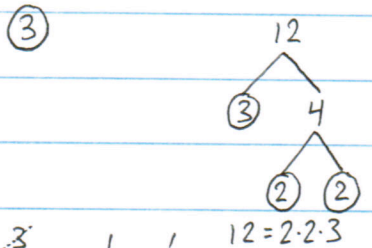
$18 = 2 \cdot 3 \cdot 3$ $\qquad$ $20 = 2 \cdot 2 \cdot 5$

$$\frac{18}{20} = \frac{2 \cdot 3 \cdot 3}{2 \cdot 2 \cdot 5} = \frac{3 \cdot 3}{2 \cdot 5} = \frac{9}{10}$$

simplify mixed number

Ex: Simplify $2\frac{3}{12}$.

already simplified ↑ ↑ need to simplify



$12 = 2 \cdot 2 \cdot 3$

$$\frac{3}{12} = \frac{3}{2 \cdot 2 \cdot 3} = \frac{1}{2 \cdot 2} = \frac{1}{4}$$

So, $2\frac{3}{12} = 2\frac{1}{4}$.

Simplifying Fractions

*To simplify a fraction, divide the top and bottom by the **highest number** that can divide into both numbers exactly.*

Simplifying Fractions

Simplifying (or *reducing*) fractions means to make the fraction as simple as possible. Why say four-eighths ($^{4}/_{8}$) when you really mean half ($^{1}/_{2}$) ?

$^{4}/_{8}$ ==> **$^{2}/_{4}$** ==> **$^{1}/_{2}$**

(Four-Eighths) (Two-Quarters) (One-Half)

How do I Simplify a Fraction ?

There are two ways to simplify a fraction:

Method 1

Try dividing both the top and bottom of the fraction until you can't go any further (try dividing by 2,3,5,7,... etc).

Example: Simplify the fraction $^{24}/_{108}$:

$$\frac{24}{108} \overset{\div 2}{=} \frac{12}{54} \overset{\div 2}{=} \frac{6}{27} \overset{\div 3}{=} \frac{2}{9}$$

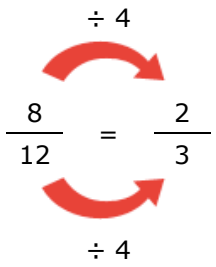
Method 2

Divide both the top and bottom of the fraction by the Greatest Common Factor, (you have to work it out first!).

Example: Simplify the fraction $^{8}/_{12}$:

1. The largest number that goes exactly into both 8 and 12 is 4, so *the Greatest Common Factor is 4*.

2. Divide both top and bottom by 4:



And the answer is: **2/3**

A Chart of Fractions

We also have a chart of fractions with the simplest fraction highlighted.

Simplifying Fractions Automatically

OK, there is a *third* method, use this tool:

Simplify =>

here's more ...

- Introduction to Fractions
- Greatest Common Factor
- Greatest Common Factor Tool
- Equivalent Fractions
- Adding Fractions
- Subtracting Fractions
- Multiplying Fractions
- Dividing Fractions
- Fractions Index

Numeracy | Name:
Homework #2-6 – Simplifying Fractions | Date: | Period:

Simplifying the following fractions by reducing them. This means finding the prime factorization of the top and bottom numbers and then canceling the numbers that appear in both.

Ex.) $\frac{30}{40}$

$$\frac{30}{40} = \frac{2 \cdot 3 \cdot 5}{2 \cdot 2 \cdot 2 \cdot 5} = \frac{3}{2 \cdot 2} = \frac{3}{4}$$

1) $\frac{2}{4}$

2) $\frac{15}{30}$

3) $\frac{24}{120}$

4) $\frac{84}{168}$

5) $\frac{120}{80}$

6) $1\frac{2}{6}$

7) $2\frac{6}{12}$

more on back

8) $\frac{62}{12}$

9) $\frac{9}{15}$

10) $1\frac{4}{18}$

11) $\frac{16}{20}$

12) $\frac{6}{7}$

13) $\frac{8}{10}$

14) $2\frac{10}{12}$

15) $1\frac{25}{10}$