

Lesson 1: Fraction ReviewInstructions:

Follow along with the video and fill in the blanks as indicated. Space has been provided for you to show all work on this sheet and take any additional notes.

Fractions: Concepts and Definitions**Equivalent Fractions**

Equivalent fractions are fractions that have the _____ value.

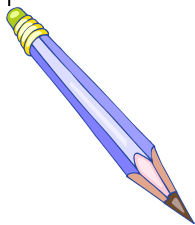
Notes: _____

Find the missing numerators. Copy steps from video.

1. $\frac{5}{6} = \frac{\quad}{24}$

2. $\frac{3}{8} = \frac{\quad}{48}$

Fill in the blank(s):

**Lowest Terms**

A fraction is in *lowest terms* if the numerator and denominator have _____ except the number _____.

Factors

Factors of a number are divisors that are _____ or _____ the original number.

Notes: _____

Reduce to lowest terms: Copy steps from video.

3. $\frac{20}{32}$

4. $\frac{60}{120}$

Fill in the blank(s):

Prime Number

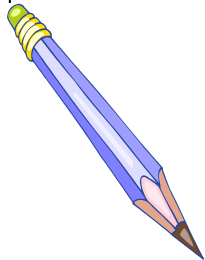
A *prime number* is a whole number, greater than 1, which has only _____ (divisors), itself and 1.

Some prime numbers: 2, 3, 5, 7, 11, 13, 17, 19, 23, _____, _____, _____, _____ . . .

Prime Factoring

The *prime factoring* of a number is the rewriting of that number as a _____ of prime factors.

Example: $50 = 10 \cdot 5 = 2 \cdot 5 \cdot 5$



Notes: _____

Fill in the blank(s):



Divisibility Rules:

Rule for 2: A number is divisible by 2 if its ones digit is _____ (that is, 2, 4, 6, 8, or 0).
Examples: 32, 578, 400

Rule for 3: A number is divisible by 3 if the _____ is divisible by 3.
Examples: 102 ($1 + 2 = 3$), 216 ($1 + 2 + 6 = 9$)

Rule for 5: A number is divisible by 5 if its _____ digit is a _____ or a _____.
Examples: 335, 1000

Prime factor: Copy steps from video.

5. 84

6. 120

Reduce to lowest terms: Copy steps from video.

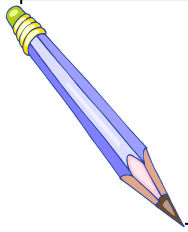
7. $\frac{84}{120}$

8. $\frac{18}{24}$

7. (Revisited) $\frac{84}{120} = \frac{2 \cdot 2 \cdot 3 \cdot 7}{2 \cdot 2 \cdot 2 \cdot 3 \cdot 5} = \frac{\cancel{2} \cdot \cancel{2} \cdot \cancel{3} \cdot 7}{\cancel{2} \cdot \cancel{2} \cdot 2 \cdot \cancel{3} \cdot 5} = \frac{7}{10}$

The crossed-out factors ($2 \cdot 2 \cdot 3$) form the number **12** ($2 \cdot 2 \cdot 3$) which is called the **greatest common factor**.

Fill in the blank(s):



Greatest Common Factor (GCF) or Greatest Common Divisor (GCD)

... of a group of numbers is the _____ number that will evenly divide into each of the given numbers.

Example: GCF of 84 and 120 is 12 ($2 \cdot 2 \cdot 3$)
(as shown in example 7)

Reduce to lowest terms and identify the GCF. Copy steps from video.

9. $\frac{36}{80} =$

GCF = _____

10. $\frac{48}{56} =$

GCF = _____

$\frac{36}{80} =$

Fill in the blank(s):

Undefined Fraction

A fraction with a zero denominator is _____.

Proper Fraction

Numerator is _____ than the denominator: $\left(\frac{n}{d}, n < d\right)$

Examples: $\frac{3}{4}$ $\frac{1}{2}$ $\frac{7}{8}$

A proper fraction always has a value less than _____.

Improper Fraction

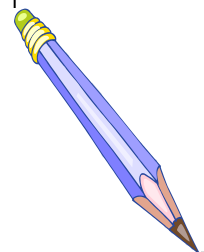
Numerator is _____ or _____ the denominator: $\left(\frac{n}{d}, n \geq d\right)$

Examples: $\frac{4}{3}$ $\frac{10}{3}$ $\frac{9}{9}$

Mixed Number

A _____ is a whole number with a fractional part.

Examples: $4\frac{2}{3}$ $12\frac{3}{7}$ $1\frac{5}{9}$



Notes: _____

Change to a mixed number. Copy steps from video.

11a) $\frac{15}{4} =$

11b) $\frac{20}{3} =$

Change to an improper fraction: Copy steps from video.

12a) $5\frac{1}{4} =$

12b) $4\frac{2}{7} =$



Fill in the blank(s):

Fraction to a Decimal

To change a *fraction to a decimal*, _____ the numerator by the denominator.

Notes: _____

Change each fraction to its decimal equivalent: Copy steps from video.

13a. $\frac{4}{5}$

13b. $\frac{1}{8}$

14a. $\frac{1}{3}$

14b. $\frac{5}{6}$

15a. $2\frac{1}{4}$

15b. $6\frac{3}{11}$

Watch video carefully for special treatment of these problems.

16a. $\frac{5}{0}$

16b. $\frac{0}{5}$

Change to a fraction in reduced (simplest) form: Copy steps from video.

17. 0.8

18. 4.7

19. 0.04

20. 2.105

STOP THE LESSON AND WORK THE PROBLEM SET

Problem Set: Fractions: Concepts and Definitions

Find the missing numbers to form equivalent fractions:

1. $\frac{4}{15} = \frac{\quad}{45}$

2. $\frac{7}{8} = \frac{\quad}{40}$

3. Write 100 as a product of prime numbers.

Reduce to lowest terms and identify the GCF between the numerator and denominator.

4. $\frac{30}{80} =$

5. $\frac{48}{72} =$

6. Change $\frac{27}{5}$ to a mixed number.

7. Change $5\frac{3}{4}$ to an improper fraction.

8. Change $\frac{7}{8}$ to an equivalent decimal.

9. Change $3\frac{5}{9}$ to a decimal.

Round to two decimal places.

10. Change 2.012 to a fraction in reduced (simplified) form.

RESUME THE LESSON FOR ANSWERS AND SOLUTIONS

(Note: On the video you will first see the answers only. Following the answers, solution steps for all problems are also shown on the video.)

Lesson 1 (cont'd): Fractions: Multiplication and Division

Copy steps from video.

1. Find $\frac{1}{2}$ of $\frac{3}{4}$

“of” means _____.

--	--	--	--

2. Multiply: $2\frac{1}{2} \times 5$

3. Multiply: $4\frac{2}{3} \times \frac{3}{4}$

4. Multiply: $4\frac{2}{3} \times \frac{3}{4}$

Fill in the blank(s):



Steps for Multiplying Fractions

1. Change whole numbers to a fraction with a _____ and change mixed numbers to _____ fractions.
2. Divide out common factors from the numerator and denominator when possible. (Often referred to as “_____”)
3. Multiply the numerators together.
4. Multiply the denominators together.
5. Change answer to a mixed number if needed.

Reciprocal

The reciprocal of a number is the number _____.

For example: the reciprocal of $\frac{3}{4}$ is _____; $\frac{1}{2}$ is _____ or just 2.

Note: The _____ of a number and its reciprocal always equals 1.

For example: $\frac{\cancel{3}}{\cancel{4}} \times \frac{\cancel{4}}{\cancel{3}} = 1$; $\frac{1}{\cancel{2}} \times \frac{\cancel{2}}{1} = 1$

Copy steps from video.

5. $10 \div 2$

6. $\frac{3}{4} \div \frac{1}{2}$

7. $\frac{5}{8} \div 2$

8. $\frac{2\frac{1}{5}}{\frac{3}{10}}$

Fill in the blank(s):



Steps for Dividing Fractions

1. Change whole numbers to a fraction with a _____ and change mixed numbers to _____ fractions.
2. Replace the 2nd fraction (the divisor) with its _____.
3. Apply the process of cancellation if possible
4. Multiply the numerators together.
5. Multiply the denominators together.
6. Change answer to a mixed number if needed.

STOP THE LESSON AND WORK THE PROBLEM SET

Problem Set: Multiplication and Division with Fractions

Perform the indicated operations. Put final answers in mixed numbers and simplified form.

1. $\frac{3}{8}$ of 24

2. $3\frac{1}{2} \times \frac{4}{5}$

3. $3\frac{2}{3} \times 12 \times 1\frac{1}{2}$

4. $27 \div 4\frac{1}{2}$

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

6. $\frac{8\frac{2}{3}}{4}$

RESUME THE LESSON FOR ANSWERS AND SOLUTIONS

(Note: On the video you will first see the answers only. Following the answers, solution steps for all problems are also shown on the video.)

Lesson 1 (cont'd): Fractions: Addition and Subtraction

Notes: _____

With **LIKE** denominators, just add the _____.

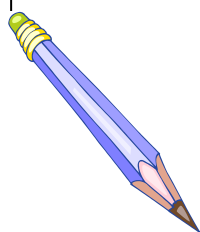
Copy steps from video.

1a. $\frac{1}{8} + \frac{3}{8}$

1b. $\frac{5}{9} + \frac{7}{9}$

With **UNLIKE** denominators, you need to find a _____ denominator.

Fill in the blank(s):



Multiples

The _____ of a number are the products formed when you multiply that number by 1, 2, 3, 4, 5, etc

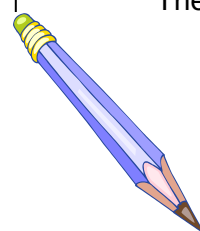
For example:

Multiples of 3: 3, 6, 9, _____, _____, ...

Multiples of 5: 5, 10, 15, _____, _____, ...

Notice that **multiples** are always _____ to or _____ than the original number. **Factors** are equal to or _____ than the original number.

Fill in the blank(s):



Least Common Multiple

The least common multiple (_____) of two numbers is the _____ number that is a multiple of both.

For example: The LCM of 4 and 10 is _____ (not 40).

Multiples of 4: 4, 8, 12, 16, _____, 24, 28, 32, 36, 40 ...

Multiples of 10: 10, _____, 30, 40 ...

2. Multiples of 3: 3, 6, 9, 12, _____, 18, 21, 24, 27, _____, 33 ... LCM = _____

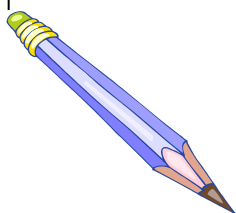
Multiples of 5: 5, 10, _____, 20, 25, _____, 35, 40, 45 ...

3. Find the LCM between 6 and 8. **Copy steps from video.** LCM = _____

Multiples of 6: _____

Multiples of 8: _____

Fill in the blank(s):



Least Common Denominator

The *least common denominator* (_____)

- is the same as the _____ and
- is determined by selecting the _____ number that is a _____ of each of the given denominators

Some common denominators can be selected mentally. For example, . . . (per video)

Notes: _____

Copy steps from video.

4. Add:

$$\begin{array}{r} \frac{5}{8} \\ + \frac{2}{3} \\ \hline \end{array}$$



Fill in the blank(s):

Steps for Adding Fractions

1. Determine the _____ – least common multiple – between the denominators.
2. Change each fraction to an _____ fraction using that denominator.
3. Add the numerators.
4. Reduce to lowest terms.
5. Change to a mixed number if needed.

Copy steps from video:

5. Add:

$$\begin{array}{r} \frac{5}{9} \\ + \frac{1}{3} \\ \hline \end{array}$$

6. Add:

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

7. Add:

$$\begin{array}{r} 6\frac{2}{5} \\ 1\frac{1}{3} \\ + 5\frac{1}{2} \\ \hline \end{array}$$

The steps for subtraction of fractions are the same except that you _____ the numerators.

Copy steps from video. Watch “borrowing” steps carefully!

8. Subtract: $12\frac{2}{3}$
 $- 5\frac{7}{8}$

9. Subtract: $6\frac{1}{4}$
 $- 3\frac{2}{5}$

10. Subtract: $8\frac{2}{3}$
 $- 5\frac{5}{9}$

STOP THE LESSON AND WORK THE PROBLEM SET

Problem Set: Addition and Subtraction of Fractions

Perform the indicated operations. Reduce all answers to lowest terms. Put improper fractions in mixed number format.

1. $5\frac{2}{15} + 3\frac{1}{5}$

2. $8\frac{4}{5} + 2\frac{3}{4} + 2\frac{1}{2}$

3. $20\frac{3}{5} - 12\frac{7}{8}$

4. $15 - 8\frac{5}{6}$

5. $12\frac{1}{8} - 4$

6. $9\frac{5}{6}$
3
 $+ 2\frac{1}{4}$

7. $8\frac{2}{3} - 5\frac{2}{5}$

8. $\frac{4}{5} \times 6\frac{1}{4}$

9. $\frac{2}{3}$ of 48

10. $\frac{3\frac{7}{8}}{\frac{3}{4}}$

RESUME THE LESSON FOR ANSWERS AND SOLUTIONS

(Note: On the video you will first see the answers only. Following the answers, solution steps for all problems are also shown on the video.)

Fill in the blanks from the video and take additional notes as desired.

Doing homework will pay off if you . . .

Do your work _____.



Make _____ for your homework.

_____ your homework. Stop and check each problem to be sure incorrect procedures do not become habit.

_____ errors you make. Ask: "What did I do wrong?"



Work with a _____.



Continue to _____ homework, especially before test time.
