


Math 8
Fractions Unit Review
Chapter 3

Name: Key

Define the following vocab words and give TWO examples:

1. Fraction:

part of a whole 
ex) $\frac{1}{4}$

Examples:

2. Inverse or Reciprocal:

the numerator and denominator are flipped. ex) $\frac{5}{6} \rightarrow \frac{6}{5}$


Examples:

3. Improper fraction:

larger numerator than denominator ex) $\frac{15}{12}$

Examples:

4. Mixed fraction:

whole number combined with a proper fraction ex) $3\frac{1}{2}$ 

Examples:

Part 1: Changing/Simplifying Fractions

If you have a fraction that can be written in lower terms, simplify it. If you have a fraction that is improper then write it as a mixed fraction.

1. $\frac{4}{8} = \frac{1}{2}$

2. $\frac{12}{4} = 3$

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

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

5. $4\frac{5}{15} = 4\frac{1}{3}$

6. $\frac{4}{12} = \frac{1}{3}$

7. $\frac{20}{30} = \frac{2}{3}$

Part 2: Adding/Subtracting Fractions

Outline the steps for adding and subtracting fractions:

Step #1: Find common denominator

Step #2: Add numerators and keep denominators the same

Step #3: Reduce to simplest terms

What do you need to remember to do if the answer is an improper fraction?

Convert to a mixed fraction and reduce

1. $\frac{2 \times 2}{3 \times 2} + \frac{4}{6} = \frac{4}{6} + \frac{4}{6} = \frac{8}{6} = 1\frac{2}{6} = 1\frac{1}{3}$

4. $1\frac{1 \times 2}{3 \times 2} + 2\frac{1}{6} = 1\frac{2}{6} + 2\frac{1}{6} = 3\frac{3}{6} = 3\frac{1}{2}$

2. $\frac{1 \times 3 \times 2}{2 \times 5 \times 2} + \frac{6}{10} = \frac{6}{10} + \frac{6}{10} = \frac{12}{10} = 1\frac{2}{10} = 1\frac{1}{5}$

5. $6\frac{1 \times 2}{3 \times 2} - 3\frac{2}{6} = 6\frac{2}{6} - 3\frac{2}{6} = 3\frac{0}{6} = 3$

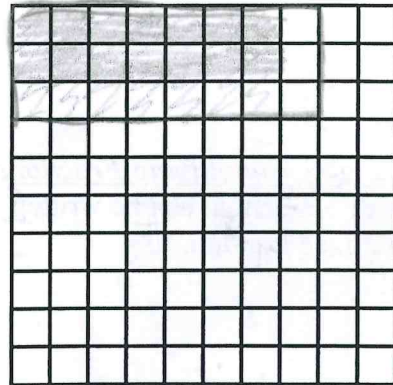
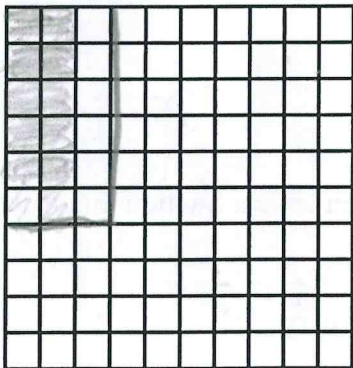
3. $\frac{3 \times 3 \times 5}{4 \times 3 \times 6 \times 2} + \frac{10}{12} = \frac{9}{12} + \frac{10}{12} = \frac{19}{12} = 1\frac{7}{12}$

6. $\frac{11}{12} - \frac{2 \times 2}{6 \times 2} = \frac{11}{12} - \frac{4}{12} = \frac{7}{12}$

Part 3: Multiplying Fractions

1. $\frac{2}{3} \left(\frac{5}{6} \right) = \frac{10}{18} = \frac{5}{9}$

2. $\frac{7}{8} \left(\frac{2}{3} \right) = \frac{14}{24} = \frac{7}{12}$



1. $\left(\frac{4}{5} \right) \left(\frac{6}{7} \right) = \frac{24}{35}$

3. $\left(\frac{2}{7} \right) \left(1\frac{4}{5} \right) = \left(\frac{2}{7} \right) \left(\frac{9}{5} \right) = \frac{18}{35}$

2. $\left(1\frac{2}{3} \right) \left(2\frac{1}{2} \right) =$

4. $\left(\frac{3}{13} \right) \left(\frac{7}{8} \right) = \frac{21}{104}$

$\left(\frac{5}{3} \right) \left(\frac{5}{2} \right) = \frac{25}{6} = 4\frac{1}{6}$

$$12. \frac{6}{17} \div \frac{7}{13} = \frac{6}{17} \times \frac{13}{7} = \frac{78}{119} \times$$

$$14. \frac{3}{4} \div \frac{5}{6} = \frac{3}{4} \times \frac{6}{5} = \frac{9}{10} \times$$

$$13. \frac{2}{17} \div \frac{6}{7} = \frac{2}{17} \times \frac{7}{6} = \frac{7}{51} \times$$

$$15. \frac{1}{3} \div \frac{3}{4} = \frac{1}{3} \times \frac{4}{3} = \frac{4}{9} \times$$

$$16. \frac{7}{8} \div \frac{7}{8} = \frac{7}{8} \times \frac{8}{7} = 1 = 1 \times$$

Part 5: Order of Operations with Fractions

- Remember:
- B: brackets
 - E: exponents
 - D: division
 - M: multiplication
 - A: add
 - S: subtract

circle together the steps that happen at the same time, from left to right

$$1. \left(\frac{1}{2}\right)^2 + \frac{2}{3}\left(\frac{1}{3} + \frac{1}{3}\right) = \frac{1}{4} + \frac{2}{3}\left(\frac{2}{3}\right) = \frac{1}{4} + \frac{4}{9} = \frac{9}{36} + \frac{16}{36} = \frac{25}{36}$$

$$2. \left(\frac{1}{3}\right)^2 + \frac{1}{5}\left(\frac{2}{3} + \frac{4}{5}\right) = \frac{1}{9} + \frac{1}{5}\left(\frac{10}{15} + \frac{12}{15}\right) = \frac{1}{9} + \frac{1}{5}\left(\frac{22}{15}\right) = \frac{1}{9} + \frac{22}{75} = \frac{75}{675} + \frac{198}{675} = \frac{273}{675} = \frac{91}{225}$$

$$3. \frac{1}{4}\left(\frac{4}{5} - \frac{1}{5}\right) + \frac{1}{2} = \frac{1}{4}\left(\frac{3}{5}\right) + \frac{1}{2} = \frac{3}{20} + \frac{1}{2} = \frac{3}{20} + \frac{10}{20} = \frac{13}{20}$$

$$4. \left(\frac{1}{2}\right)^3 + \frac{2}{3}\left(2\frac{1}{3} + 1\frac{1}{2}\right) = \frac{1}{8} + \frac{2}{3}\left(2\frac{2}{6} + 1\frac{3}{6}\right) = \frac{1}{8} + \frac{2}{3}\left(3\frac{5}{6}\right)$$

$$5. 2\frac{1}{3}\left(2\frac{1}{3} \div \frac{1}{3}\right) + \frac{1}{2} =$$

$$\frac{7}{3}\left(\frac{7}{3} \times \frac{3}{1}\right) + \frac{1}{2} = \frac{49}{3} + \frac{1}{2} = \frac{98}{6} + \frac{3}{6} = \frac{101}{6} = 16\frac{5}{6}$$

$$= \frac{1}{8} + \frac{2}{3}\left(\frac{23}{6}\right) = \frac{1}{8} + \frac{23}{9} = \frac{9}{72} + \frac{184}{72} = \frac{193}{72} = 2\frac{49}{72}$$