

10-5-17

Aim: SWBAT add and subtract Rational numbers (fractions and mixed numerals) that include negatives.

HW: Pg. 240 # 2 - 13

Quiz tomorrow (Conversions and fraction basics)

Do Now: Evaluate.

$$\frac{1}{5} + \frac{1}{5} = \frac{2}{5} \quad \frac{2}{8} - \frac{1}{8} = \frac{1}{8}$$

Write each expression as a fraction. If the fraction names a whole number, state the whole number.

1.  $21 \div 2 = \frac{21}{2}$

2.  $8 \overline{)55} = \frac{55}{8}$

3.  $7 \div 9 = \frac{7}{9}$

4.  $36 \div 4 = \frac{36}{4} = 9$

5.  $9 \div 25 = \frac{9}{25}$

6.  $14 \overline{)70} = \frac{70}{14} = 5$

Write each fraction in simplest form.

7.  $\frac{16 \div 16}{48 \div 16} = \frac{1}{3}$

\* 8.  $\frac{-45 \div 9}{99 \div 9} = \frac{-5}{11}$

\* 9.  $\frac{13 \div 13}{91 \div 13} = -\frac{1}{7}$

10.  $\frac{30 \div 6}{42 \div 6} = \frac{5}{7}$

11.  $\frac{84 \div 4}{140 \div 4} = \frac{21 \div 7}{35 \div 7} = \frac{3}{5}$

12.  $\frac{96 \div 4}{112 \div 4} = \frac{24 \div 4}{28 \div 4} = \frac{6}{7}$

13.  $\frac{52 \div 26}{78 \div 26} = \frac{2}{3}$

\* 14.  $\frac{62 \div 2}{-66 \div 2} = \frac{31}{-33}$

15.  $\frac{15 \div 15}{90 \div 15} = \frac{1}{6}$

16.  $\frac{56 \div 28}{84 \div 28} = \frac{2}{3}$

17.  $\frac{105 \div 5}{175 \div 5} = \frac{21 \div 7}{35 \div 7} = \frac{3}{5}$

\* 18.  $\frac{-258}{387} = \frac{\div 3}{\div 3} = \frac{-86}{129}$

\* 19.  $\frac{-300 \div 75}{375 \div 75} = \frac{-4}{5}$

\* 20.  $\frac{255 \div 15}{240 \div 15} = -\frac{17}{16}$

21.  $\frac{1320 \div 30}{1650 \div 30} = \frac{44 \div 11}{55 \div 11} = \frac{4}{5}$

*Handwritten:*  $\frac{123}{55} = \frac{-2}{3}$

Change each fraction to a whole number or a mixed numeral in simplest form.

\* 22.  $\frac{-17}{2} = -8 \frac{1}{2}$

23.  $\frac{24}{10} = 2 \frac{4}{10} = 2 \frac{2}{5}$

24.  $\frac{68}{17} = 4$

25.  $\frac{98}{32} = 3 \frac{2}{32} = 3 \frac{1}{16}$

\* 26.  $\frac{85}{15} = -5 \frac{10}{15} = -5 \frac{2}{3}$

\* 27.  $\frac{140}{-35} = -4$

\* 28.  $\frac{162}{24} = -6 \frac{18}{24} = -6 \frac{3}{4}$

29.  $\frac{215}{43} = 5$

30.  $\frac{776}{64} = 12 \frac{8}{64} = 12 \frac{1}{8}$

$\frac{29}{27}$

Write 2 equivalent fractions for each of the following.

- 1)  $\frac{5}{20}$      $\frac{1}{4}$      $\frac{10}{40}$   
 2)  $\frac{50}{150}$      $\frac{10}{30}$      $\frac{1}{3}$   
 3)  $\frac{3}{9}$      $\frac{1}{3}$      $\frac{6}{18}$   
 4)  $\frac{45}{90}$      $\frac{1}{2}$      $\frac{90}{180}$

Circle the letter of the best choice.

5) Pat shaded a fraction of this circle.



Which circle below shows an equivalent fraction?

- A.    C.   
 B.    D.

6) Which figure is shaded to show  $\frac{3}{4}$ ?

- A.    C.   
 B.    D.

7) What is the missing number?

$$\frac{2}{7} = \frac{\square}{21}$$

- A. 4  
 B. 5  
 C. 6  
 D. 7

8) The figure below shows  $\frac{3}{8}$  shaded.



Which fraction is equivalent to  $\frac{3}{8}$ ?

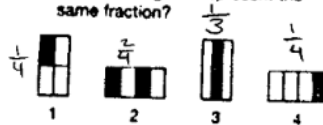
- A.  $\frac{1}{6}$     C.  $\frac{1}{2}$   
 B.  $\frac{1}{3}$     D.  $\frac{3}{3}$

9) What part of the figure is shaded?



- A.  $\frac{1}{2}$   
 B.  $\frac{2}{3}$   
 C.  $\frac{3}{4}$   
 D.  $\frac{5}{9}$

10) Each figure represents a fraction. Which two figures represent the same fraction?



- A. Rectangles 1 and 2  
 B. Rectangles 1 and 4  
 C. Rectangles 2 and 3  
 D. Rectangles 3 and 4

**Evaluating Fractions and Mixed Numbers with Negatives**

1. Circle double signs and rewrite.
2. Make all terms fractions.
3. Find the least common denominator (LCD) and make equivalent fractions.
4. Keep the LCD and compute the answer's numerator using integer rules.
5. Simplify if necessary. (Final answers should always be in simplest form.)

$$\frac{2}{3} + \frac{4}{9}$$

The LCD is the largest denominator or a multiple of it !!!!!

$$3 \sqrt{9} \checkmark$$

9, 18, 27

3, 6, 9, 12, 15, 18, 21, 24, 27

Same signs: Add and Keep

Different signs: Subtract and Think

Evaluate. Find the value.

$$-\frac{2}{5} + \left(-\frac{5}{6}\right)$$

$$\frac{-2 \times 6}{5 \times 6} - \frac{5 \times 5}{6 \times 5}$$

$$\boxed{\frac{-12}{30} - \frac{25}{30}}$$

$$\boxed{-12 - 25}$$

$$-37$$

$$\frac{-37}{30}$$

$$\boxed{-5 + 28}$$

$$-\frac{1}{7} - \left(-\frac{4}{5}\right)$$

$$\frac{-1 \times 5}{7 \times 5} + \frac{4 \times 7}{5 \times 7}$$

$$\boxed{\frac{-5}{35} + \frac{28}{35}}$$

$$\frac{23}{35}$$

Same signs: Add and Keep

Different signs: Subtract and Think

Evaluate.

$$-\frac{4}{5} - \left(-\frac{2}{3}\right)$$

$$\frac{-4 \times 3}{5 \times 3} + \frac{2 \times 5}{3 \times 5}$$

$$\boxed{\frac{-12}{15} + \frac{10}{15}}$$

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

Same signs: Add and Keep

Different signs: Subtract and Think

Evaluate.

$$3\frac{5}{8} - (-1\frac{1}{3})$$

$$3\frac{5}{8} + 1\frac{1}{3}$$

$$\frac{29 \times 3}{8 \times 3} + \frac{4 \times 8}{3 \times 8}$$

$$\boxed{\frac{87}{24} + \frac{32}{24}}$$

$$\frac{119}{24}$$

$$-4\frac{2}{3} - (-3\frac{4}{5})$$

$$-4\frac{2}{3} + 3\frac{4}{5}$$

$$\frac{-14 \times 5}{3 \times 5} + \frac{19 \times 3}{5 \times 3}$$

$$-70 + 57$$

$$\boxed{\frac{-70}{15} + \frac{57}{15}}$$

$$\frac{-13}{15}$$



Same signs: Add and Keep

Different signs: Subtract and Think

Evaluate.

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

$$\frac{-19 \times 2}{4 \times 2} - \frac{45}{8}$$

$$\boxed{\frac{-38}{8} - \frac{45}{8}}$$

$$\frac{-83}{8}$$