

10-6-17

Aim: SWBAT multiply and divide fractions and mixed numbers including negatives.

HW: Pg. 245 # 3 - 13 odd ; Pg. 250 # 25 - 35 odd
Quiz Thursday (add and subtract)

Do Now: Quick Quiz

Pg. 240 # 2-13

Both positive so answer is positive.

$$\textcircled{2} \quad \frac{1}{2} + \frac{1}{3}$$

$$\frac{3}{6} + \frac{2}{6}$$

$$\frac{5}{6}$$

$$\textcircled{3} \quad \frac{7}{8} - \frac{1}{4}$$

$$\frac{7}{8} - \frac{2}{8}$$

$$\frac{5}{8}$$

More positives so answer is positive.

$$\textcircled{4} \quad \frac{1}{8} - \frac{5}{32}$$

$$\frac{4}{32} - \frac{5}{32}$$

$$-\frac{1}{32}$$

more negatives so the answer is negative.

$$\textcircled{5} \quad \frac{5}{9} + \frac{1}{6}$$

$$\frac{10}{18} + \frac{3}{18}$$

$$\frac{13}{18}$$

Both positive so the answer is positive.

$$\textcircled{6} \quad \frac{-7}{12} + \frac{4}{15}$$

$$\frac{-35}{60} + \frac{16}{60}$$

$$-\frac{19}{60}$$

More negatives so the answer is negative.

$$\textcircled{7} \quad \frac{-3}{8} + \frac{-9}{20}$$

$$\frac{-3}{8} - \frac{9}{20}$$

$$\frac{-15}{40} - \frac{18}{40}$$

$$-\frac{33}{40}$$

Both negative so the answer is negative.

$$\textcircled{8} \quad 4\frac{5}{8} - 2\frac{2}{3}$$

$$\frac{37}{8} - \frac{8}{3}$$

$$\frac{111}{24} - \frac{64}{24}$$

$$\frac{47}{24}$$

More positives so the answer is positive.

$$\textcircled{9} \quad 5\frac{1}{2} - \frac{7}{10}$$

$$\frac{11}{2} - \frac{7}{10}$$

$$\frac{55}{10} - \frac{7}{10}$$

$$\frac{48}{10} \div 2$$

$$\frac{24}{5}$$

more positives so the answer is positive.

must reduce

$$\textcircled{10} \quad 7\frac{4}{5} + 5\frac{3}{7}$$

$$\frac{39}{5} + \frac{38}{7}$$

$$\frac{273}{35} + \frac{190}{35}$$

$$\frac{463}{35}$$

Both positive so the answer is positive.

$$\textcircled{11} \quad 12\frac{5}{18} - \frac{3}{4}$$

$$\frac{221}{18} - \frac{3}{4}$$

$$\frac{442}{36} - \frac{27}{36}$$

$$\frac{415}{36}$$

More positives so the answer is positive.

$$\textcircled{12} \quad 12 - 16\frac{3}{7}$$

$$12 - \frac{115}{7}$$

$$\frac{84}{7} - \frac{115}{7}$$

$$-\frac{31}{7}$$

More negatives so the answer is negative.

$$\textcircled{13} \quad -7\frac{3}{11} - (-8)$$

$$-7\frac{3}{11} + 8$$

$$\frac{-80}{11} + \frac{8}{1}$$

$$\frac{-80}{11} + \frac{88}{11}$$

$$\frac{8}{11}$$

More positives so the answer is positive.

Multiplying Fractions and Mixed Numbers

1. Make everything a fraction
2. Cancel
3. Multiply numerators → new numerator
Multiply denominators → new denominator
4. Make sure the final answer is simplified

Class Work: Multiply the fractions or mixed numbers. Remember to change all mixed numbers to improper fractions before you multiply. State your answer in simplest form.

1) $\frac{2}{11} \cdot -\frac{1}{4} = -\frac{2}{11}$	2) $\frac{8}{13} \cdot \frac{3}{8}$	3) $\frac{48}{1} \cdot -\frac{3}{8} = -18$
4) $-\frac{7}{8} \cdot -\frac{3}{5}$	5) $-\frac{9}{10} \cdot \frac{2}{3}$	6) $\frac{25}{35} \cdot \frac{2}{5}$
7) $-\frac{5}{6} \cdot -1\frac{4}{5}$	8) $2\frac{1}{2} \cdot 1\frac{2}{5}$ $\frac{5}{2} \cdot \frac{7}{5} = \frac{7}{2}$	9) $-4\frac{1}{4} \cdot 3\frac{1}{3}$ $-\frac{17}{4} \cdot \frac{10}{3} = -\frac{85}{6}$
10) $1\frac{1}{2} \cdot -1\frac{2}{3}$	11) $\frac{5}{7} \cdot 1\frac{3}{5}$	12) $-2\frac{1}{6} \cdot -1\frac{1}{5}$

13) Find the product of $\frac{1}{3}$, $-\frac{3}{8}$ and $\frac{4}{5}$.

Dividing Fractions and Mixed Numbers

1. Make everything a fraction
2. Keep the first fraction, change division to multiplication, and flip last fraction to its reciprocal
3. Cancel
4. Multiply numerators → new numerator
Multiply denominators → new denominator
5. Make sure the final answer is simplified

Class Work: Divide the fractions or mixed numbers. Remember to change all mixed numbers to improper fractions first. State your answer in simplest form.

1) $\frac{2}{5} \div \frac{3}{4}$ $\frac{2}{5} \cdot \frac{4}{3} = \frac{8}{15}$	2) $\frac{3}{8} \div \frac{2}{3}$	3) $-\frac{3}{8} \div \frac{9}{10}$ $-\frac{3}{8} \cdot \frac{10}{9} = -\frac{5}{12}$
4) $-\frac{2}{3} \div \frac{5}{6}$	5) $-5\frac{2}{5} \div (-2\frac{1}{10})$ $-\frac{27}{5} \div -\frac{21}{10} = \frac{18}{7}$	6) $-3\frac{1}{4} \div (-8\frac{2}{3})$
7) $3\frac{3}{4} \div 2\frac{1}{2}$	8) $7\frac{1}{2} \div 2\frac{1}{10}$	9) $\frac{4}{5} \div -6$
10) $21 \div -\frac{3}{4}$	11) $-12\frac{1}{4} \div 4\frac{2}{3}$	12) $-10\frac{1}{5} \div 3\frac{3}{15}$

13) What is $\frac{7}{12}$ divided by $\frac{5}{6}$?