



Warm Up Grade 8

Jan. 10. 2017



1) Reduce the following fractions

a) $\frac{36}{48} \div 2 = \frac{18}{24} \div 2$

$\frac{9}{12} \div 3 = \frac{3}{4}$

b) $\frac{250}{300} \div 10 = \frac{25}{30} \div 5$

$\frac{5}{6}$

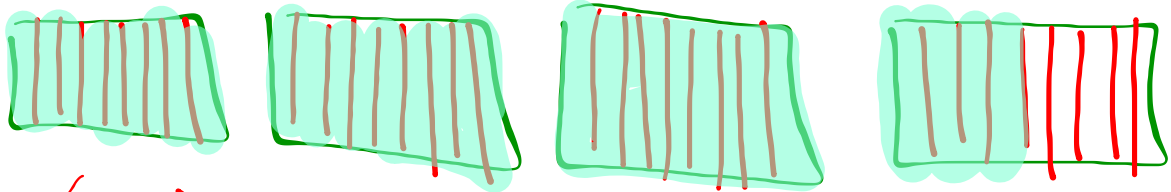
$\frac{250}{300} \div 50 = \frac{5}{6}$

a) $\frac{36}{48} \div 12 = \frac{3}{4}$

2) Rewrite the following an improper fraction $3\frac{4}{9}$

3) Rewrite the following as a mixed fraction in lowest terms $\frac{124}{10} = 12\frac{4}{10}$

2) $3\frac{4}{9} = \frac{31}{9}$



$(3 \times 9) + 4$
 $27 + 4$
 31 Numerator

Sheet 173

1a) $\frac{9}{8} = 1\frac{1}{8}$

b) $\frac{14}{3} = 4\frac{2}{3}$

c) $\frac{15}{8} = 1\frac{7}{8}$

d) $\frac{21}{5} = 4\frac{1}{5}$

e) $\frac{21}{8} = 2\frac{5}{8}$

f) $\frac{13}{4} = 3\frac{1}{4}$

g) $\frac{33}{10} = 3\frac{3}{10}$

h) $\frac{103}{100} = 1\frac{3}{100}$

2a) $1\frac{1}{3} = \frac{4}{3}$

b) $3\frac{1}{4} = \frac{13}{4}$

c) $5\frac{1}{2} = \frac{11}{2}$

d) $2\frac{3}{10} = \frac{23}{10}$

e) $3\frac{7}{8} = \frac{31}{8}$

f) $2\frac{7}{6} = \frac{19}{6}$

g) $1\frac{1}{100} = \frac{101}{100}$

h) $4 = \frac{20}{5}$

3a) $\frac{6}{4} = 1\frac{2}{4} = 1\frac{1}{2}$

b) $\frac{18}{12} = 1\frac{6}{12} = 1\frac{1}{2}$

c) $\frac{28}{8} = 3\frac{4}{8} = 3\frac{1}{2}$

d) $\frac{38}{10} = 3\frac{8}{10} = 3\frac{4}{5}$

e) $\frac{170}{100} = 1\frac{70}{100} = 1\frac{7}{10}$

f) $\frac{64}{6} = 10\frac{4}{6} = 10\frac{2}{3}$

g) $\frac{60}{15} = 4$

h) $\frac{138}{20} = 6\frac{18}{20} = 6\frac{9}{10}$

$$5. \quad \frac{55}{4} = 13\frac{3}{4} \text{ games of football}$$

$$b. \quad \frac{10}{3} = 3\frac{1}{3} \text{ games of hockey}$$

$$10. \quad a) \quad \frac{230}{690} \stackrel{\div 10}{=} \frac{23}{69} \text{ or } \frac{1}{3}$$

$$b) \quad \frac{345}{690} \stackrel{\div 5}{=} \frac{69}{138} = \frac{23}{46} = \frac{1}{2}$$

$$c) \quad \frac{460}{690} \stackrel{\div 10}{=} \frac{46}{69} = \frac{2}{3}$$

$$d) \quad \frac{805}{690} \stackrel{\div 5}{=} \frac{161}{138} \text{ or } 1\frac{23}{138}$$

$$11. \quad a) \quad \frac{30}{60} = \frac{1}{2}$$

$$b) \quad \frac{20}{60} = \frac{10}{30} = \frac{1}{3}$$

$$c) \quad \frac{45}{60} = \frac{9}{12} = \frac{3}{4}$$

$$d) \quad \frac{75}{60} = \frac{15}{12} = \frac{5}{4} \text{ or } 1\frac{1}{4}$$

$$e) \quad \frac{90}{60} = \frac{9}{6} = \frac{3}{2} \text{ or } 1\frac{1}{2} \quad f) \quad \frac{140}{60} = \frac{14}{6} = \frac{7}{3} \text{ or } 2\frac{1}{3}$$

Adding & Subtracting Fraction

same denominators

-When adding fractions WITH COMMON denominators, just add the numerators (leave the denominator the same)ALWAYS REDUCE solution

$$\frac{5}{12} + \frac{3}{12} = \frac{8}{12} \begin{array}{l} \div 4 \\ \div 4 \end{array} = \boxed{\frac{2}{3}}$$

-When subtracting fractions WITH COMMON denominators, just subtract the numerators (leave the denominator the same)ALWAYS REDUCE solution

$$\frac{19}{21} - \frac{9}{21} = \frac{10}{21}$$

↑ ↗
Same
so
just
subtract
numerators

$$\frac{1}{2} \times \frac{2}{2} = \frac{2}{4}$$

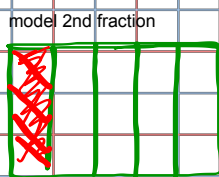
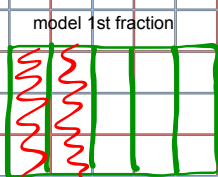
$$\frac{1}{2} \times \frac{3}{2} = \frac{3}{6}$$

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

Modelling

Adding Fractions

a) $\frac{2}{5} + \frac{1}{5}$

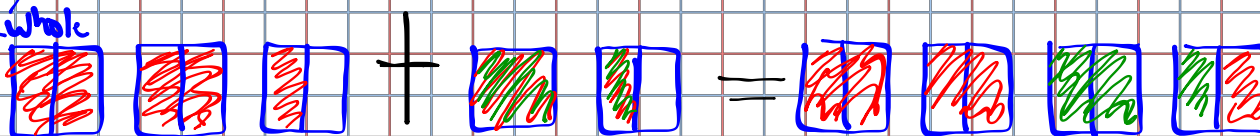


=



b) $2\frac{1}{2} + 1\frac{1}{2} = 4$

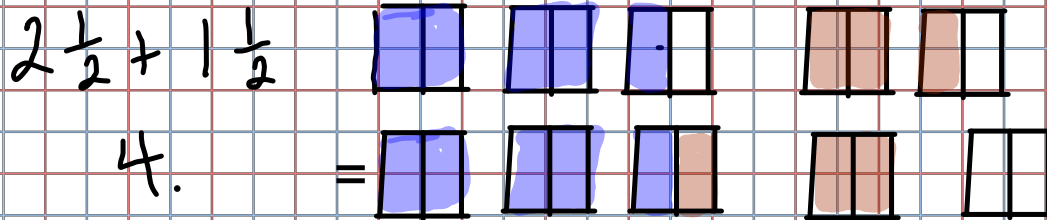
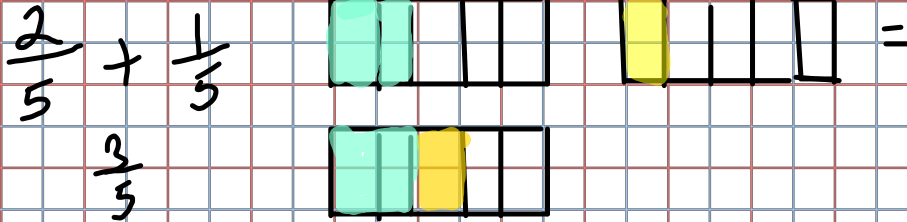
2 whole



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

Solutions

Adding Fraction

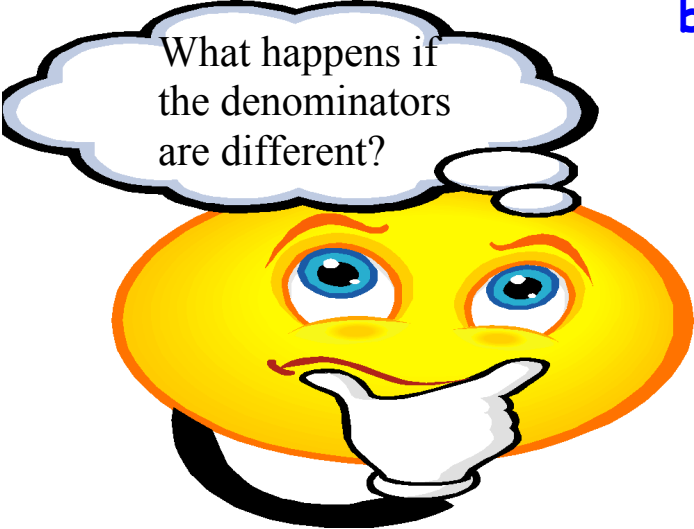


Adding & Subtracting Fraction

DIFFERENT denominators

You can add or subtract fraction with different denominators **as long as you find equivalent fractions with the same denominators first**. Then simply add (or subtract) the numerators and the denominators will stay the same.*Find common denominators

Find a
by determining the LCM.



What happens if
the denominators
are different?

Lowest

Common

Multiple

$$\frac{3^{x3}}{4^{x3}} + \frac{5^{x2}}{6^{x2}}$$

Find the LCM first!



$$= \frac{9}{12} + \frac{10}{12}$$

Multiples of 4 and 6:

4	4, 8, 12, 16, 20, 24, 28, 32
6	6, 12, 18, 24, 30

$$= \frac{19}{12} \quad \text{improper}$$

12 is the LCM
(common Denominator)

$$= 1\frac{7}{12} \quad \text{Mixed}$$

When subtracting fractions you must have a ...

Common Denominator

Ex) $\frac{13}{7} - \frac{4}{7} = \frac{9}{7}$

Same Denominators

$$= 1\frac{2}{7}$$

This look similar to adding Fraction



You try ...

(Remember to write all solution in simplest form)

$$\frac{11}{4} - \frac{5}{4} = \frac{6}{4} \text{ Reduce} = \frac{3}{2}$$

same

\downarrow

$1\frac{2}{4}$

\downarrow

$1\frac{1}{2}$

or

$1\frac{1}{2}$

Oh, what to do when the denominators are different???



I Know this one!!!!





When denominators are different you have to find a "common denominator"



How

By determining the **LCM**

Lowest Common Multiple
(of the denominators)

Subtract the following rational numbers



$$\frac{3 \times 13}{3 \times 7} - \frac{4 \times 4}{3 \times 7}$$

$$= \frac{39}{21} - \frac{16}{21}$$

$$= \frac{23}{21}$$

Look at the multiples of each denominator

Find the LCM

$$\begin{array}{r} 7 \\ \hline 7 \\ 14 \\ \textcircled{21} \\ 28 \\ 35 \end{array}$$

$$\begin{array}{r} 3 \\ \hline 3 \\ 6 \\ 9 \\ 12 \\ 15 \\ 18 \\ \textcircled{21} \end{array}$$

Thus the LCM is

Your Turn

$$\begin{array}{l|l} 12 & 12, 24, 36, 48 \\ 9 & 9, 18, 27, 36 \end{array}$$

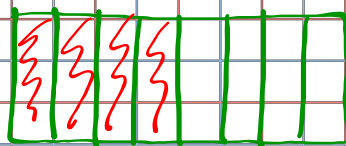
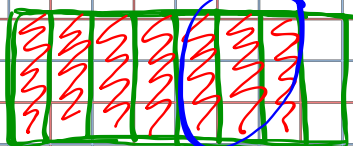
$$\begin{array}{l|l} 7 & 7, 14, 21, 28, 35 \\ 28 & 28, 56, \end{array}$$

$$\begin{aligned} 1) & \frac{3 \times 17}{3 \times 12} - \frac{4 \times 4}{9 \times 4} \\ & = \frac{51}{36} - \frac{16}{36} \\ & = \frac{35}{36} \end{aligned}$$

$$\begin{aligned} 2) & \frac{4 \times 2}{4 \times 7} - \frac{5}{28} \\ & = \frac{8}{28} - \frac{5}{28} \\ & = \frac{3}{28} \end{aligned}$$

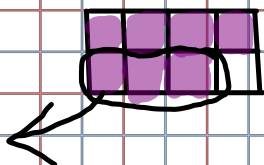
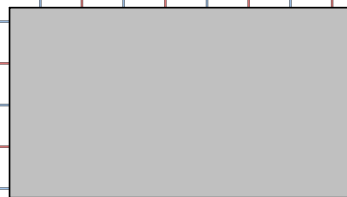
Modeling Subtracting Fraction

c) $\frac{7}{8} - \frac{3}{8}$

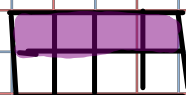


$\frac{4}{8} = \frac{1}{2}$

$\frac{7}{8} - \frac{3}{8}$
 $\frac{4}{8}$



=



Adding Fractions with Unlike Denominators

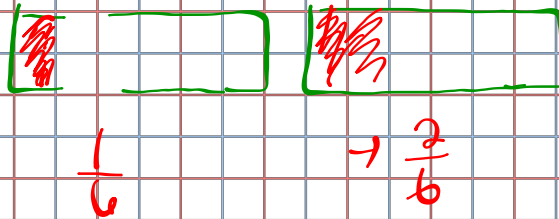
a) $\frac{1}{2} + \frac{1}{3}$ common denominator is 6



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

b) $\frac{1}{6} + \frac{1}{3}$

$$\frac{1}{6} + \frac{2}{6} = \frac{3}{6}$$

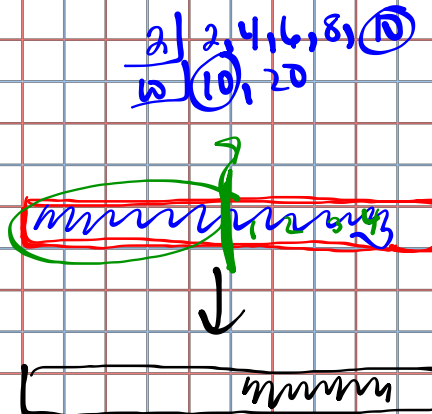


c) $\frac{9}{10} - \frac{1}{2}$

$$\frac{9}{10} - \frac{5}{10} = \frac{4}{10}$$

Reduce

$$= \frac{2}{5}$$



Grade 8 Sheet 151 Adding_Subtracting Fractions.pdf