



Warm Up Grade 8

JANUARY 13, 2020



1) Reduce the following fractions

a)  $\frac{36}{48}$

$$\frac{36 \div 6}{48 \div 6} = \frac{6 \div 2}{8 \div 2} = \frac{3}{4}$$

b)  $\frac{250}{300} \div 10 = \frac{25 \div 5}{30 \div 5} = \frac{5}{6}$

2) Rewrite the following as an improper fraction  $3\frac{4}{9}$   $\frac{31}{9}$

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

$$12\frac{4}{10} \div 2$$

$$12\frac{2}{5}$$

## 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)  $\frac{6}{4} = 1\frac{2}{4}$  or  $1\frac{1}{2}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Adding & Subtracting Fraction

same denominators

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

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

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

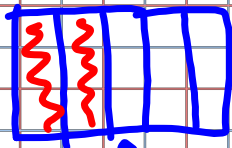
$$\frac{19}{21} - \frac{9}{21} = \frac{10}{21}$$

Modelling

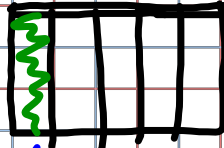
# Adding Fractions

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

model 1st fraction

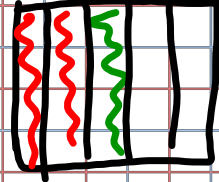


model 2nd fraction

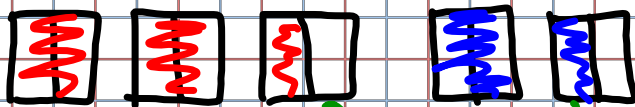


=

model answer fraction

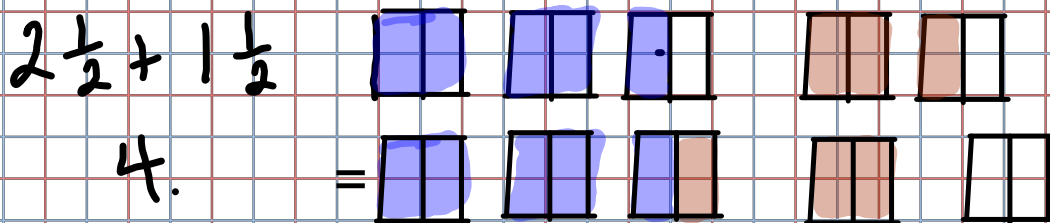
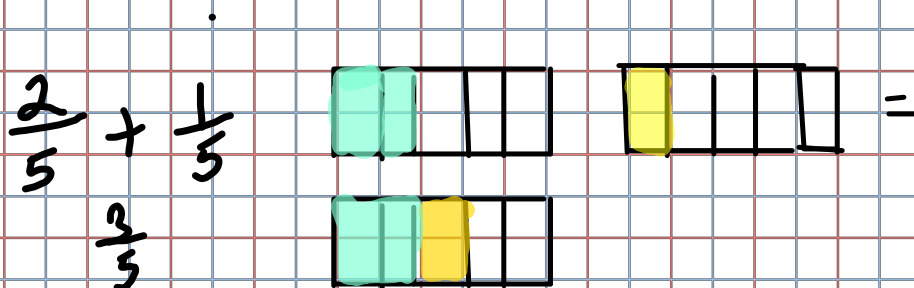


b)  $2\frac{1}{2} + 1\frac{1}{2}$



Solutions

### Adding Fraction

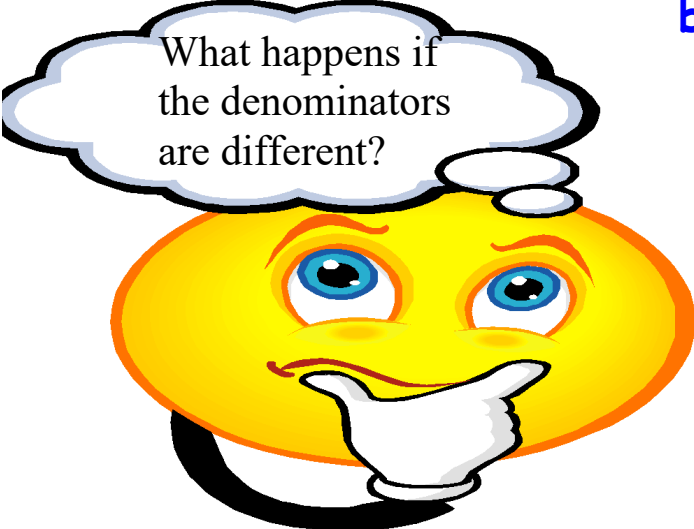


## Adding & Subtracting Fraction

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 common denominator  
by determining the LCM.



What happens if the denominators are different?

L

C

M

$$\begin{aligned} & \frac{3^{\times 3}}{4} + \frac{5^{\times 2}}{6} \\ &= \frac{9}{12} + \frac{10}{12} \\ &= \frac{19}{12} \quad \text{Improper} \\ &= 1\frac{7}{12} \quad \text{Mixed} \end{aligned}$$

Find the LCM first!



Multiples of 4 and 6:

4	4, 8, 12, 16, 20...
6	6, 12, 18...



When subtracting fractions you must have a ...

*Common Denominator*

Ex)  $\frac{13}{7} - \frac{4}{7} = \frac{9}{7} = 1\frac{2}{7}$

Same Denominators

This look similar to adding Fraction



You try ...

(Remember to write all solution in simplest form)

$$\frac{11}{4} - \frac{5}{4} = \frac{6}{4} \begin{array}{l} \div 2 \\ \div 2 \end{array} = \frac{3}{2} = 1\frac{1}{2}$$

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



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

$$\frac{39}{21} - \frac{28}{21}$$

$$\frac{11}{21}$$

Look at the multiples of each denominator

Find the LCM

7

$$1 \times 7 = 7$$

$$2 \times 7 = 14$$

$$3 \times 7 = 21$$

$$4 \times 7 = 28$$

3

$$1 \times 3 = 3$$

$$2 \times 3 = 6$$

$$3 \times 3 = 9$$

$$4 \times 3 = 12$$

$$5 \times 3 = 15$$

$$6 \times 3 = 18$$

$$7 \times 3 = 21$$

Thus the LCM is

**Your Turn**  $9 \rightarrow 9, 18, 27, 36, \dots$   
 $12 \rightarrow 12, 24, 36$

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

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

You try

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

$$\frac{6}{9} + \frac{4}{9} = \frac{10}{9} = 1 \frac{1}{9}$$

No modelling

$$b) \frac{5}{8} + \frac{1}{6}$$

$$= \frac{15}{24} + \frac{4}{24}$$

$$= \frac{19}{24}$$

$$c) \frac{9}{10} - \frac{2}{3}$$

$$= \frac{27}{30} - \frac{20}{30}$$

$$= \frac{7}{30}$$

$$d) \frac{2}{9} + \frac{5}{6}$$

$$= \frac{4}{18} + \frac{15}{18}$$

$$= \frac{19}{18}$$

$$= 1 \frac{1}{18}$$

You try

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

$$\frac{6}{9} + \frac{4}{9} = \frac{10}{9}$$

$$b) \frac{5}{8} + \frac{1}{6}$$

$$\frac{15}{24} + \frac{4}{24} = \frac{19}{24}$$

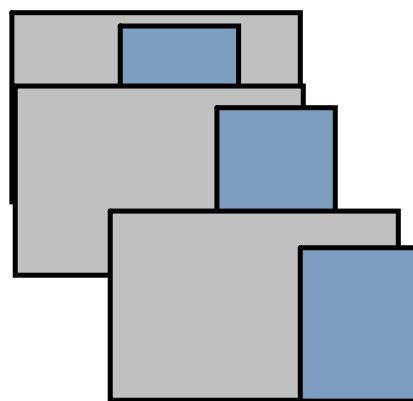
$$d) \frac{2}{9} + \frac{5}{6}$$

$$\frac{4}{18} + \frac{15}{18} = \frac{19}{18}$$

No modelling

$$c) \frac{9}{10} - \frac{2}{3}$$

$$\frac{27}{30} - \frac{20}{30} = \frac{7}{30}$$



Homework

Sheet 151 #1-6  
 Draw #1 b, d, f, g  
 #2 b, d, g



# Class/Homework

Sheet 151 # 1 to #6

~~(only model #1 bfg #2 bfg)~~



Grade 8 Sheet 151 Adding\_Subtracting Fractions.pdf