

Warm Up Grade 8

January 27, 2016

LCM

3	3, 6, 9, 12, 15, 18, 21, 24, 27, 30
5	5, 10, 15, 20, 25, 30
6	6, 12, 18, 24, 30

1) Add or subtract the following

a) $\frac{3 \times 7}{3 \times 12} + \frac{5 \times 4}{9 \times 12}$

LCM

12	12, 24, 36
9	9, 18, 27, 36

$$= \frac{21}{36} + \frac{20}{36}$$

$$= \frac{41}{36}$$

b) $\frac{2 \times 10}{3 \times 30} + \frac{4 \times 6}{5 \times 30} + \frac{1 \times 5}{6 \times 30}$

$$= \frac{20}{30} + \frac{24}{30} + \frac{5}{30}$$

$$= \frac{49}{30}$$

$$= 1 \frac{19}{30}$$

c) $\frac{5 \times 5}{6 \times 30} - \frac{4 \times 2}{15 \times 30}$

$$= \frac{25}{30} - \frac{8}{30}$$

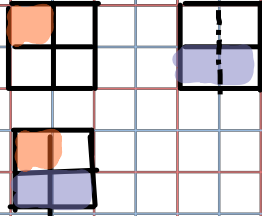
$$= \frac{17}{30}$$

Sheet 151

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

$$\frac{1}{4} + \frac{2}{4}$$

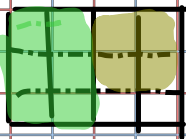
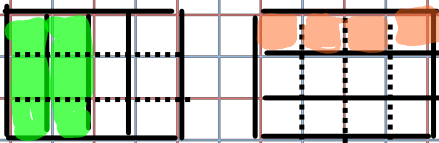
$$= \frac{3}{4}$$



$$d) \frac{2}{4} + \frac{1}{3}$$

$$\frac{6}{12} + \frac{4}{12}$$

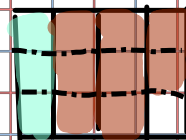
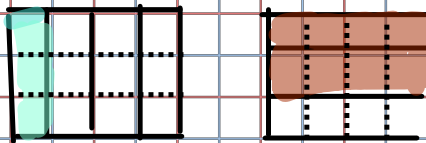
$$\frac{10}{12} = \frac{5}{6}$$



$$f) \frac{1}{4} + \frac{2}{3}$$

$$\frac{3}{12} + \frac{8}{12}$$

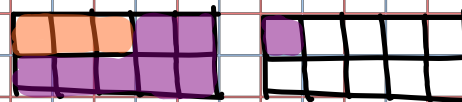
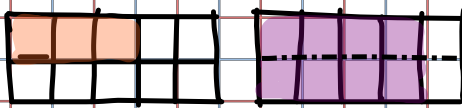
$$\frac{11}{12}$$



$$g) \frac{3}{10} + \frac{4}{5}$$

$$\frac{3}{10} + \frac{8}{10}$$

$$\frac{11}{10} \text{ or } 1\frac{1}{10}$$



$$1a) \frac{3}{12} + \frac{7}{12}$$

$$\frac{10}{12} \text{ or } \frac{5}{6}$$

$$c) \frac{1}{4} + \frac{5}{12}$$

$$\frac{3}{12} + \frac{5}{12} = \frac{8}{12} \text{ or } \frac{2}{3}$$

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

$$e) \frac{3}{5} + \frac{1}{2}$$

$$\frac{6}{10} + \frac{5}{10} = \frac{11}{10}$$

$$h) \frac{7}{12} + \frac{3}{4}$$

$$\frac{7}{12} + \frac{9}{12} = \frac{16}{12}$$

$$\text{or } \frac{4}{3}$$

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

$$i) \frac{9}{10} + \frac{1}{3}$$

$$\frac{27}{30} + \frac{10}{30} = \frac{37}{30}$$

$$2a) \frac{7}{8} - \frac{5}{8}$$

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

$$c) \frac{9}{10} - \frac{9}{100}$$

$$\frac{90}{100} - \frac{9}{100} = \frac{81}{100}$$

$$e) \frac{12}{15} - \frac{3}{5}$$

$$\frac{12}{15} - \frac{9}{15} = \frac{3}{15} = \frac{1}{5}$$

$$f) \frac{5}{5} - \frac{3}{4}$$

$$1 - \frac{3}{4} = \frac{1}{4}$$

$$\text{or } \frac{4}{4} - \frac{3}{4} = \frac{1}{4}$$

$$h) \frac{9}{15} - \frac{1}{2}$$

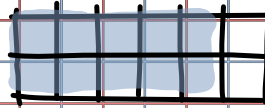
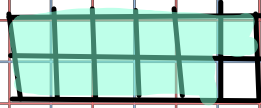
$$\frac{18}{30} - \frac{15}{30} = \frac{3}{30} = \frac{1}{10}$$

$$i) \frac{7}{25} - \frac{1}{4}$$

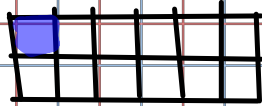
$$\frac{28}{100} - \frac{25}{100} = \frac{3}{100}$$

2 b)

$$\frac{11}{12} - \frac{5}{6}$$



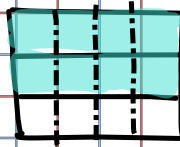
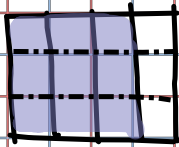
$$\frac{11}{12} - \frac{10}{12}$$



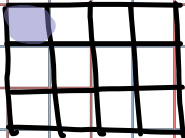
$$\frac{1}{12}$$

d)

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



$$\frac{9}{12} - \frac{8}{12}$$



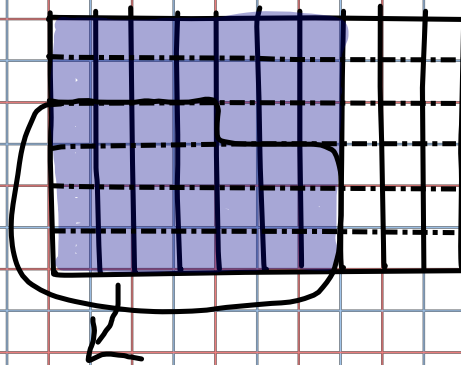
$$\frac{1}{12}$$

2a)

$$\frac{7}{10} - \frac{5}{12} \times 5$$

$$\frac{42}{60} - \frac{25}{60}$$

$$\frac{17}{60}$$



$$3a) \frac{1 \times 3}{10 \times 3} + \frac{1 \times 10}{3 \times 10}$$

$$\frac{3}{30} + \frac{10}{30}$$

$$\frac{13}{30}$$

$$b) \frac{2 \times 4}{3 \times 4} - \frac{1 \times 3}{4 \times 3}$$

$$\frac{8}{12} - \frac{3}{12}$$

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

$$c) \frac{4 \times 3}{5 \times 3} + \frac{1 \times 5}{3 \times 5}$$

$$\frac{12}{15} + \frac{5}{15}$$

$$\frac{17}{15}$$

$$d) \frac{3 \times 5}{4 \times 5} - \frac{7 \times 2}{10 \times 2}$$

$$\frac{15}{20} - \frac{14}{20}$$

$$\frac{1}{20}$$

$$e) \frac{3 \times 2}{5 \times 2} + \frac{1 \times 5}{2 \times 5}$$

$$\frac{6}{10} + \frac{5}{10}$$

$$\frac{11}{10}$$

$$f) \frac{9 \times 4}{10 \times 4} - \frac{5 \times 5}{8 \times 5}$$

$$\frac{36}{40} - \frac{25}{40}$$

$$\frac{11}{40}$$

$$\frac{9}{10} - \frac{5}{8}$$

$$\frac{72}{80} - \frac{50}{80} = \frac{22}{80}$$

$$= \frac{11}{40}$$

Sheet 151

4 a) $\frac{4}{15} + \frac{1}{15} + \frac{7}{15}$

$$\frac{12}{15} = \frac{4}{5}$$

b) $\frac{1}{2} + \frac{2}{3} + \frac{3}{5}$

$$\frac{15}{30} + \frac{20}{30} + \frac{18}{30} = \frac{53}{30}$$

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

c) $\frac{2}{3} + \frac{1}{4} + \frac{3}{10}$

$$\frac{40}{60} + \frac{15}{60} + \frac{18}{60} = \frac{73}{60}$$

$$\frac{2}{3} = \frac{40}{60}$$

$$\frac{3}{4} = \frac{18}{24}$$

d) $\frac{3}{4} + \frac{5}{12} + \frac{1}{2}$

$$\begin{aligned} \frac{18}{24} + \frac{10}{24} + \frac{12}{24} &= \frac{40}{24} \\ &= \frac{20}{12} \\ &= \frac{10}{6} \\ &= \frac{5}{3} \end{aligned}$$

$$\begin{aligned} \frac{3}{4} + \frac{5}{12} + \frac{1}{2} \\ \frac{9}{12} + \frac{5}{12} + \frac{6}{12} \\ \frac{20}{12} \\ \frac{5}{3} \end{aligned}$$

5. $\frac{1}{2} + \frac{1}{3} + \frac{1}{4}$

$$\frac{6}{12} + \frac{4}{12} + \frac{3}{12} = \frac{13}{12}$$

or $1\frac{1}{12}$ hours doing
laundry
or 1 hr 5 min

6. Doug

$$\frac{1}{4} + \frac{1}{8}$$

$$\frac{2}{8} + \frac{1}{8} = \frac{3}{8} = \frac{9}{24}$$

Ann

$$\frac{1}{6} + \frac{1}{6} = \frac{2}{6} = \frac{8}{24}$$

Doug ate $\frac{1}{24}$ more of the pie.

Adding and Subtracting Mixed Numbers

There are 2 ways that you can use to add or subtract mixed numbers.

Adding

$$2\frac{1}{2} + 3\frac{4}{5}$$

You can change to improper fractions, then add the fractions the same way you always do.

$$\begin{array}{r} 5 \times 5 \\ 5 \times 2 \end{array} + \frac{19 \times 2}{5 \times 2}$$

Improper

$$\frac{25}{10} + \frac{38}{10}$$

then C.D.

$$= \frac{63}{10} = 6\frac{3}{10}$$

$$2\frac{1}{2} + 3\frac{4}{5}$$

common denominator

$$2\frac{5}{10} + 3\frac{8}{10}$$

then improper

$$\frac{25}{10} + \frac{38}{10} = \frac{63}{10} = 6\frac{3}{10}$$

Ex 2) $2\frac{1}{2} + 3\frac{4}{5}$

You can add the whole numbers, then add the fractions. But remember that you can not have an answer being both a mixed number and an improper fraction.

$$= 2 + 3 + \frac{1}{2} + \frac{4}{5}$$

$$= 5 + \frac{1 \times 5}{2 \times 5} + \frac{4 \times 2}{5 \times 2}$$

Common Denominator

$$= 5 + \frac{5}{10} + \frac{8}{10}$$

$$= 5 + \frac{13}{10}$$

Improper must take to mixed

$$= 5 + 1\frac{3}{10}$$

$$= 6\frac{3}{10}$$

Subtracting

$$3 \frac{1}{3} - 1 \frac{5}{6}$$

You can change to improper fractions, then subtract

$$\overset{2 \times}{\frac{10}{3}} - \overset{1 \times}{\frac{11}{6}}$$

Improper
Common Den.

$$\frac{20}{6} - \frac{11}{6}$$

$$\frac{9}{6} = \frac{3}{2} = 1 \frac{1}{2}$$

$$3 \frac{1}{3} - 1 \frac{5}{6}$$

make Common Denom.

$$3 \frac{2}{6} - 1 \frac{5}{6}$$

Improper

$$\frac{20}{6} - \frac{11}{6}$$

$$\frac{9}{6} = \frac{3}{2} = 1 \frac{1}{2}$$

Method 2

You can subtract the fraction parts first, then subtract the whole numbers, but remember that sometimes you may have to borrow from the whole numbers.

$$3 - 1 \quad \frac{1 \times 2}{3 \times 2} - \frac{5}{6}$$

Common denominator for

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

Must borrow

$$1 + 1 \quad \frac{2}{6} - \frac{5}{6}$$

$$1 \quad \frac{6}{6} + \frac{2}{6} - \frac{5}{6}$$

$$= 1 \quad \frac{8}{6} - \frac{5}{6}$$

$$= 1 \quad \frac{3}{6}$$

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

$$\begin{array}{r} 690 \\ - 799 \\ \hline \end{array}$$

Examples :

$10, 20, 3, 40$
 $8, 16, 24, 32, 40$
 (a) $2\frac{3}{10} + 1\frac{5}{8}$

OR

$2\frac{12}{40} + 1\frac{25}{40}$
 $2 + 1 + \frac{12}{40} + \frac{25}{40}$
 $\underline{3} + \frac{37}{40}$
 $3\frac{37}{40}$

$\frac{23}{10 \times 4} + \frac{13 \times 5}{8 \times 5}$
 $\frac{92}{40} + \frac{65}{40}$
 $\frac{157}{40}$
 $= 3\frac{37}{40}$

(b) $1\frac{9}{10} + 1\frac{1}{5}$

OR

$1\frac{9}{10} + \frac{6}{5}$
 $1\frac{9}{10} + \frac{12}{10}$
 $1 + 1 + \frac{9}{10} + \frac{2}{10}$
 $2 + \frac{11}{10}$
 $2 + 1\frac{1}{10}$
 $3\frac{1}{10}$

$\frac{19}{10} + \frac{6}{5}$
 $\frac{19}{10} + \frac{12}{10}$
 $\frac{31}{10}$
 $3\frac{1}{10}$

Improper

(c) $3\frac{2}{3} + 4\frac{7}{8}$

(d) $4\frac{1}{4} + 2\frac{3}{5}$

Examples :

(a) $2\frac{3}{10} + 1\frac{5}{8}$

$$2\frac{12}{40} + 1\frac{25}{40}$$

$$3\frac{37}{40}$$

$$\begin{array}{r} 23 \\ 10 \end{array} + \begin{array}{r} 13 \\ 8 \end{array}$$
$$\begin{array}{r} 92 \\ 40 \end{array} + \begin{array}{r} 65 \\ 40 \end{array}$$
$$\begin{array}{r} 157 \\ 40 \end{array}$$

(b) $1\frac{9}{10} + 1\frac{1}{5}$

$$1\frac{9}{10} + 1\frac{2}{10}$$

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

$$2 + 1\frac{1}{10}$$
$$3\frac{1}{10}$$

$$\frac{19}{10} + \frac{6}{5}$$

$$\frac{19}{10} + \frac{12}{10}$$

$$3\frac{1}{10}$$

(c) $3\frac{2}{3} + 4\frac{7}{8}$

$$3\frac{16}{24} + 4\frac{21}{24}$$

$$7\frac{37}{24}$$

$$7 + 1\frac{13}{24}$$

$$8\frac{13}{24}$$

(d) $4\frac{1}{4} + 2\frac{3}{5}$

$$\frac{16}{4} + \frac{13}{5}$$

$$\frac{80}{20} + \frac{52}{20}$$

$$\frac{132}{20}$$

$$6\frac{12}{20}$$

Class/Homework

Sheet 153 #1-5



1(a,b,c,d,e,f), 2(a,b,c), 3(a,b,c,d) 4(a,b),5(b)

Attachments

Sheet 153 Adding & Subtracting MIXED FRactions PDF.pdf