

Warm Up Grade 8

January 12, 2017

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

1) Add or subtract the following

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

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

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

$$= 1 \frac{5}{36}$$

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

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

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

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

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

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

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

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1) Add or subtract the following

$$a) \frac{3 \times 7}{3 \times 12} + \frac{5 \times 4}{9 \times 4} \left. \begin{array}{l} 12 \\ 9 \end{array} \right\}$$

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

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

$$= 1 \frac{5}{36}$$

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

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

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

$$\text{or}$$

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

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

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

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

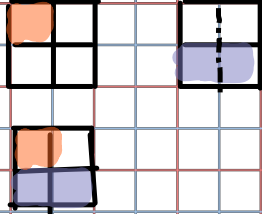
$$= \frac{17}{30} \checkmark$$

Sheet 151

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

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

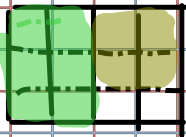
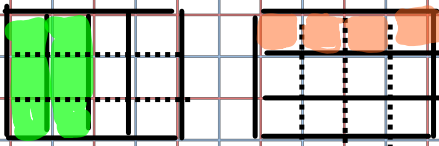
$= \frac{3}{4}$



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

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

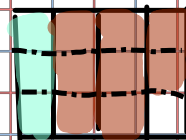
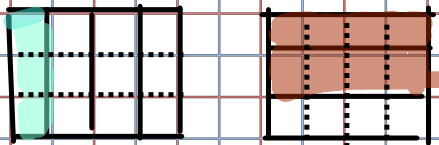
$\frac{10}{12} = \frac{5}{6}$



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

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

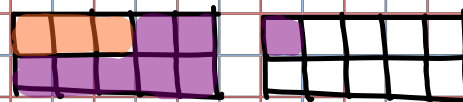
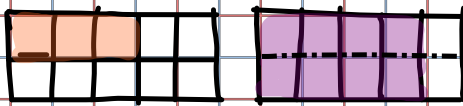
$\frac{11}{12}$



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

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

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



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

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

$$c) \frac{1}{4} + \frac{5}{12} \quad \frac{1}{4} = \frac{3}{12}$$

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

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

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

$$h) \frac{7}{12} + \frac{3}{4} \quad \frac{3}{4} = \frac{9}{12}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

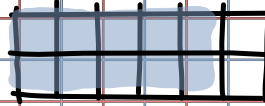
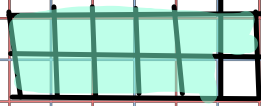
$$\frac{18}{30} - \frac{15}{30} = \frac{3}{30} = \frac{1}{10}$$

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

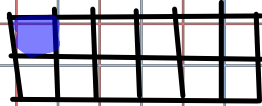
$$\frac{28}{100} - \frac{25}{100} = \frac{3}{100}$$

2 b)

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



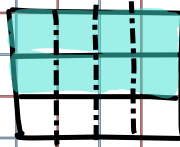
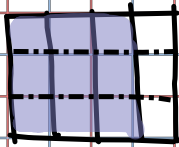
$$\frac{11}{12} - \frac{10}{12}$$



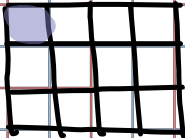
$$\frac{1}{12}$$

d)

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



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



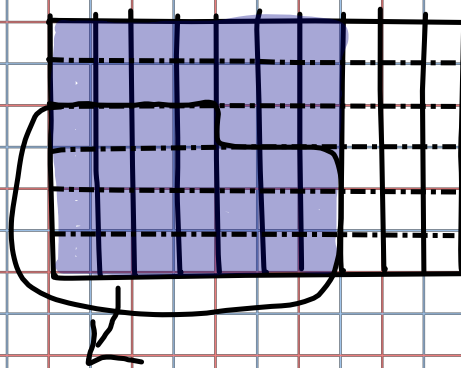
$$\frac{1}{12}$$

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

$$\frac{12}{15} \overset{\text{Reduce}}{=} \frac{4}{5}$$

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

$$\frac{18}{24} + \frac{10}{24} + \frac{12}{24} = \frac{40}{24}$$

$$= \frac{20}{12}$$
$$= \frac{10}{6}$$
$$= \frac{5}{3}$$

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

$$\frac{9}{12} + \frac{5}{12} + \frac{6}{12}$$

$$\frac{20}{12}$$
$$\frac{5}{3}$$

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

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

(3x5)+4

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

$$\frac{5 \cdot 5}{5 \cdot 2} + \frac{19 \cdot 2}{5 \cdot 2}$$

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

$$= \frac{63}{10} \rightarrow 6\frac{3}{10} \text{ OR}$$

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

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.

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

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

need common denominators

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

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

write as mixed

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

add whole #

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

Subtracting

$$\begin{aligned}
 & 3 \frac{1}{3} - 1 \frac{5}{6} && \text{You can change to improper fractions, then subtract} \\
 & = \frac{10}{3} - \frac{11}{6} \\
 & = \frac{20}{6} - \frac{11}{6} \\
 & = \frac{9}{6} \text{ Reduce } \frac{3}{2} \text{ or } 1 \frac{1}{2}
 \end{aligned}$$

OR

$$3 \frac{1}{3} - 1 \frac{5}{6} \quad \text{You can subtract the fraction parts first, then subtract the whole numbers, but remember that sometimes you may have to borrow from the whole numbers.}$$

Whole - Whole Fract - Fract

$$\begin{aligned}
 & = \underline{3-1} && \frac{1}{3} - \frac{5}{6} \\
 & = 2 && \begin{array}{l} \nearrow \text{Need C.D.} \\ \frac{2}{6} - \frac{5}{6} \\ \leftarrow \text{can't do this} \\ \text{So need to borrow} \end{array} \\
 & = 1 && \begin{array}{l} \frac{12}{6} - \frac{5}{6} \\ \text{Rewrite as Entire} \end{array} \\
 & = 1 && \frac{8}{6} - \frac{5}{6} \\
 & = 1 && \frac{3}{6} \\
 & && \text{Reduc} \\
 & = 1 \frac{1}{2}
 \end{aligned}$$

Examples :

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

Step 1) Mixed → entire

$$= \frac{23 \cdot 4}{10 \cdot 4} + \frac{13 \cdot 5}{8 \cdot 5}$$

$$= \frac{92}{40} + \frac{65}{40}$$

$$= \frac{157}{40}$$

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

$2 + 1 + \frac{3}{10} + \frac{5}{8}$
 $3 + \frac{12}{40} + \frac{25}{40}$
 $3\frac{37}{40}$

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

$$= \frac{19}{10} + \frac{6 \cdot 2}{5 \cdot 2}$$

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

$$= \frac{31}{10}$$

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

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

Bad

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

$$= \frac{11 \cdot 8}{3 \cdot 8} - \frac{34 \cdot 3}{8 \cdot 3}$$

$$= \frac{88}{24} - \frac{117}{24}$$

$$= \frac{-29}{24}$$

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

$$= \frac{17 \cdot 5}{4 \cdot 5} - \frac{13 \cdot 4}{5 \cdot 4}$$

$$= \frac{85}{20} - \frac{52}{20}$$

$$= \frac{33}{20}$$

$$= 1\frac{13}{20}$$

Examples :

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

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

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

$$\frac{23}{10} + \frac{13}{8}$$
$$\frac{92}{40} + \frac{65}{40}$$
$$\frac{157}{40}$$

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

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

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

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

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

Worksheets

Do both sides and change each fraction to an entire fraction before adding

 Adding Mixed

1 to 5

 Subtracting Mixed

1 to 5

Attachments

Sheet 153 Adding & Subtracting MIXED FRactions PDF.pdf

adding_mixed_numbers.pdf

subtracting_mixed_numbers.pdf