

Warm Up Grade 7

Date:



1) Evaluate (Means find the answer)

line up

a) (-3) + (+7) = (+4)

different (what's diff of 3 and 7)

b) (-8) +(-1) = (-9)

Same (add # keep sign)

c) 124.6 - 35.=

$$\begin{array}{r} {}^{0}\not{1}\,{}^{1}\not{2}\,{}^{1}\not{4}.6 \\ -\;\;35.0 \\ \hline 89.6 \end{array}$$

2) Add the following:

a) $5\frac{1}{4} + 2\frac{11}{12}$

$5\frac{1}{4} + 2\frac{11}{12}$

Changed to improper

$\frac{21}{4} + \frac{35}{12}$ (×3 on $\frac{1}{4}$)

Need C.D.

$\frac{63}{12} + \frac{35}{12}$

Now add top

$\frac{98}{12}$ Reduce $\Leftarrow$ $\frac{49}{6}$

Improper → Mixed

$8\frac{2}{12}$

Reduce

$8\frac{1}{6}$

OR

$5 + 2 + \frac{1}{4} + \frac{11}{12}$ (×3 on $\frac{1}{4}$)

C.D.

$7 + \frac{3}{12} + \frac{11}{12}$

$7 + \frac{14}{12}$

Improper → Mixed

$7 + 1\frac{2}{12}$

$8\frac{2}{12}$ ← does fraction reduce

$8\frac{1}{6}$

Pg 202 Homework Solutions

1a) $1\frac{3}{6} = \frac{9}{6}$ or $\frac{3}{2}$

b) $4\frac{2}{8} = \frac{34}{8}$ or $\frac{17}{4}$

c) $1\frac{3}{4} = \frac{7}{4}$

d) $3\frac{3}{5} = \frac{18}{5}$

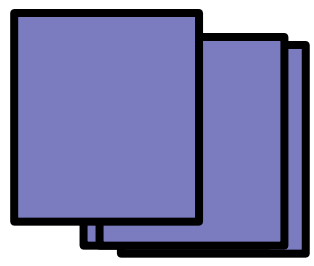
2a) $\frac{17}{5} = 3\frac{2}{5}$

b) $\frac{9}{4} = 2\frac{1}{4}$

c) $\frac{18}{4} = 4\frac{2}{4}$ or $4\frac{1}{2}$

d) $\frac{28}{6} = 4\frac{4}{6}$ or $4\frac{2}{3}$

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



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

$\frac{3}{3} + \frac{2}{3} + \frac{2}{3} = \frac{7}{3}$

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

c) $1\frac{4}{6} + 2\frac{1}{2}$

$\frac{10}{6} + \frac{5}{2}$

$\frac{10}{6} + \frac{15}{6}$

$\frac{25}{6}$

$1\frac{4}{6} + 2\frac{3}{6}$

$3\frac{7}{6}$

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

$4\frac{1}{6}$

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

$\frac{7}{3} + \frac{23}{6}$

$\frac{14}{6} + \frac{23}{6}$

$\frac{37}{6}$

$2\frac{2}{6} + 3\frac{5}{6}$

$5\frac{7}{6}$

$5 + 1\frac{1}{6}$

$6\frac{1}{6}$

Homework Solutions

6 a) $\frac{1}{2}+\frac{1}{5}=\frac{7}{10}$ (given)

$3\frac{1}{2}+\frac{1}{5}=3\frac{7}{10}$

b) $\frac{1}{2}+2\frac{1}{5}=2\frac{7}{10}$

c) $3\frac{1}{2}+2\frac{1}{5}=5\frac{7}{10}$

d) $4\frac{1}{2}+3\frac{1}{5}=7\frac{7}{10}$

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

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

$3\frac{7}{10}$

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

$\frac{1}{2}+\frac{11}{5}$

$\frac{5}{10}+\frac{22}{10}=\frac{27}{10}$

Homework

Pg 202 # 7–13, Reflect

$2\frac{2}{3}$ fruit Juice

$6\frac{3}{4}$ water

All together ⇒ add

$2\frac{2}{3} + 6\frac{3}{4}$

$2+6+\frac{2}{3}+\frac{3}{4}$

c.d.

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

$8 + \frac{17}{12}$

$8 + 1\frac{5}{12}$

$9\ 5/12$

$2\frac{2}{3} + 6\frac{3}{4}$

$\frac{8}{3} + \frac{27}{4}$ (×4, ×3)

c.d.

$\frac{32}{12} + \frac{81}{12}$

$\frac{113}{12}$

$9\ 5/12$

Homework Solutions

7. For each pair of numbers, find a common denominator. Then add.

a) $3\frac{1}{3} + \frac{1}{4}$

$\frac{10}{3} + \frac{1}{4}$

$\frac{40}{12} + \frac{3}{12}$

$= \frac{43}{12}$

$= 3\frac{7}{12}$

OR

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

$3 + \frac{4}{12} + \frac{3}{12}$

$3 + \frac{7}{12}$

$3\frac{7}{12}$

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

$\frac{1}{2} + \frac{19}{10}$

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

$= \frac{24}{10}$

$= 2\frac{4}{10} = 2\frac{2}{5}$

OR

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

$1 + \frac{5}{10} + \frac{9}{10}$

$1 + \frac{14}{10}$

$1 + 1\frac{4}{10}$

$2\frac{4}{10}$

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

c) $\frac{3}{4} + 2\frac{3}{5}$

$\frac{3}{4} + \frac{13}{5}$

$\frac{15}{20} + \frac{52}{20}$

$= \frac{67}{20}$

$= 3\frac{7}{20}$

OR

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

$2 + \frac{15}{20} + \frac{12}{20}$

$2 + \frac{27}{20}$

$2 + 1\frac{7}{20}$

$3\frac{7}{20}$

d) $\frac{3}{7} + 2\frac{1}{2}$

$\frac{3}{7} + \frac{5}{2}$

$\frac{6}{14} + \frac{35}{14}$

$= \frac{41}{14}$

$= 2\frac{13}{14}$

OR

$2 + \frac{3}{7} + \frac{1}{2}$

$2 + \frac{6}{14} + \frac{7}{14}$

$2 + \frac{13}{14}$

$= 2\frac{13}{14}$

Homework Solutions

7

e) $4\frac{7}{8} + 1\frac{2}{3}$

$5 + \frac{7}{8} + \frac{2}{3}$

$5 + \frac{21}{24} + \frac{16}{24}$

$5 + \frac{37}{24}$

$5 + 1\frac{13}{24}$

$6\frac{13}{24}$

or

$4\frac{7}{8} + 1\frac{2}{3}$

$\frac{39}{8} + \frac{5}{3}$

$\frac{117}{24} + \frac{40}{24}$

$= \frac{157}{24}$

f) $2\frac{3}{5} + 2\frac{2}{3}$

$\frac{13}{5} + \frac{8}{3}$

$\frac{39}{15} + \frac{40}{15}$

$\frac{79}{15}$

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

OR

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

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

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

$4 + \frac{9}{15} + \frac{10}{15}$

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

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

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

g) $5\frac{2}{5} + 1\frac{7}{8}$

$\frac{27}{5} + \frac{15}{8}$

$\frac{216}{40} + \frac{75}{40}$

$\frac{291}{40}$

$= 7\frac{11}{40}$

OK

$5\frac{2}{5} + 1\frac{7}{8}$

$5 + 1 + \frac{2}{5} + \frac{7}{8}$

$6 + \frac{2}{5} + \frac{7}{8}$

$6 + \frac{16}{40} + \frac{35}{40}$

$6 + \frac{51}{40}$

$6 + 1\frac{11}{40}$

$7\frac{11}{40}$

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

$\frac{23}{6} + \frac{9}{4}$

$\frac{46}{12} + \frac{27}{12}$

$\frac{73}{12}$

$= 6\frac{1}{12}$

OR

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

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

$5 + \frac{5}{6} + \frac{1}{4}$

$5 + \frac{10}{12} + \frac{3}{12}$

$5 + \frac{13}{12}$

$5 + 1\frac{1}{12}$

$= 6\frac{1}{12}$

8. Two students, Galen and Mai, worked on a project.

Galen worked for $3\frac{2}{3}$ h.

Mai worked for $2\frac{4}{5}$ h.

What was the total time spent on the project?

Homework Solutions

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

$3\frac{10}{15} + 2\frac{12}{15}$

$5\frac{22}{15}$

or $6\frac{7}{15}$

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

$\frac{11}{3} + \frac{14}{5}$

$\frac{55}{15} + \frac{42}{15}$

$\frac{97}{15}$

Homework Solutions

9. **Assessment Focus** Joseph used $1\frac{3}{8}$ cans of paint to paint his room. Juntia used $2\frac{1}{4}$ cans to paint her room.

a) Estimate how many cans of paint were used in all.

b) Calculate how many cans of paint were used.

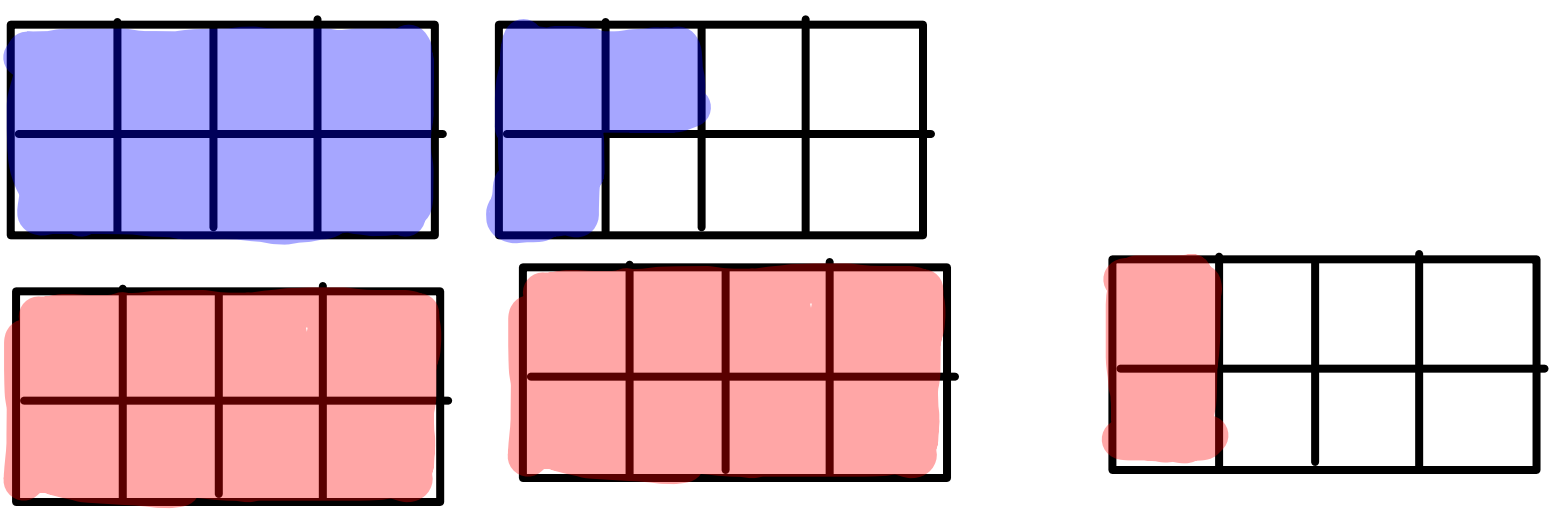
c) Draw a diagram to model your calculations in part b.

a) $1\frac{3}{8} + 2\frac{1}{4}$

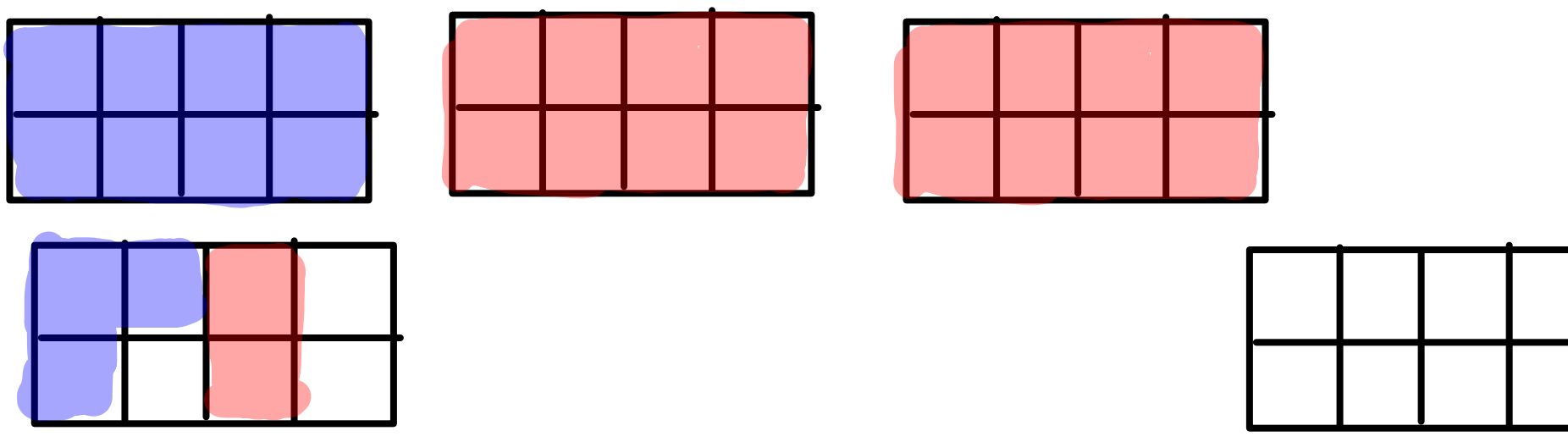
$\approx 1\frac{1}{2} + 2\frac{1}{4} = 3\frac{3}{4}$

b) $1\frac{3}{8} + 2\frac{2}{8} = 3\frac{5}{8}$

c)



=



Homework Solutions

10. A recipe for punch calls for $2\frac{2}{3}$ cups of fruit concentrate and $6\frac{3}{4}$ cups of water.

How many cups of punch will the recipe make?

Show your work.

$2\frac{2}{3} + 6\frac{3}{4}$

$2\frac{8}{12} + 6\frac{9}{12}$

$8\frac{17}{12}$ or $9\frac{5}{12}$ or $\frac{113}{12}$

11. Use the fractions $1\frac{3}{5}$ and $2\frac{1}{10}$.

a) Add the fractions and the whole numbers separately.

b) Write each mixed number as an improper fraction.

c) Add the improper fractions.

d) Which method was easier: adding the mixed numbers or adding the improper fractions? Why do you think so? When would you use each method?

d) As long as you explain

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

$= 1 + 2 + \frac{3}{5} + \frac{1}{10}$

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

$= 3 + \frac{6}{10} + \frac{1}{10}$

$= 3 + \frac{7}{10}$

$= 3\frac{7}{10}$

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

c) $\frac{8}{5} + \frac{21}{10}$

$\frac{16}{10} + \frac{21}{10}$

$= \frac{37}{10}$

$= 3\frac{7}{10}$

Homework Solutions

12. An auto mechanic completed 2 jobs before lunch.
The jobs took $2\frac{2}{3}$ h and $1\frac{3}{4}$ h.
How many hours did it take the mechanic to complete the 2 jobs?

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

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

$\frac{32}{12} + \frac{21}{12}$

$\frac{53}{12}$ or $4\frac{5}{12}$

13. **Take It Further** Replace the ☐ with an improper fraction or mixed number to make this equation true.

$3\frac{3}{5} + \square = 5$

Find as many answers as you can.

Draw diagrams to represent your thinking.

$3\frac{3}{5} + \square = 5$

$\frac{18}{5} + \square = \frac{5}{1}$

$\frac{18}{5} + \boxed{\frac{7}{5}} = \frac{25}{5}$

or

$1\frac{2}{5}$

Reflect

How is adding a mixed number and a fraction like adding two fractions?
How is it different?
Use examples to explain.

Subtracting Mixed Numbers

Subtracting

$3\frac{1}{3} - 1\frac{5}{6}$ You can change to improper fractions, then subtract like before by finding common denominators

$\frac{10}{3} - \frac{11}{6}$

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

$\frac{9}{6}$

Reduce

For now use this method since the second method can get complicated

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

OR

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

$3\frac{2}{6} - 1\frac{5}{6}$ Step 1) Need common denominators for the fractional parts(will they subtract?

how to borrow

IF no then borrow

$2\frac{8}{6} - 1\frac{5}{6}$

$1\frac{3}{6}$ ÷3 ÷3

$1\frac{1}{2}$

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

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

$= 2\frac{8}{6}$

$3 - 1$

2

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

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

No Need to borrow

$1 + \left(\frac{6}{6} + \frac{2}{6}\right) - \frac{5}{6}$

$1 + \left(\frac{8}{6} - \frac{5}{6}\right)$

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

Ex 2) Without having to borrow:

$3\frac{5}{8} - 1\frac{3}{10}$

$3\frac{25}{40} - 1\frac{12}{40}$

$2\frac{13}{40}$

Step 1) Need common denominators for the fractional parts(will they subtract?

*IF no then borrow

* If yes then just subtract fractional parts from fractional parts and whole p

whole parts

Steps for Subtraction

Change to Improper

a) $3\frac{7}{8} - 1\frac{3}{5}$ (add, add)

$\frac{5 \times 31}{5 \times 8} - \frac{8 \times 4}{5 \times 4}$

Need C.D.

$\frac{155}{40} - \frac{64}{40}$

$\begin{array}{r} 155 \\ -\,64 \\ \hline 91 \end{array}$

$\frac{91}{40}$

$= 2\frac{11}{40}$

method

$5\frac{1}{6} - 3\frac{4}{6}$

$(5-3) + (\frac{1}{6} - \frac{4}{6})$

$2 \quad (\frac{1}{6} - \frac{4}{6})$

$1 \; (1\frac{1}{6} - \frac{4}{6})$

$1 \; (\frac{7}{6} - \frac{4}{6})$

$1\frac{3}{6}$

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

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

$\frac{31}{6} - \frac{11 \times 2}{3 \times 2}$

Need C.D.

$\frac{31}{6} - \frac{22}{6}$

$\frac{9}{6}$

$= 1\frac{3}{6}$ ← Reduce

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

Examples:

a) $3\frac{7}{8} - 1\frac{3}{5}$

$\frac{5\times31}{5\times8} - \frac{8\times8}{5\times8}$

$\frac{155}{40} - \frac{64}{40}$

$= \frac{91}{40}$

$= 2\frac{11}{40}$

Solutions to previous slide

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

$\frac{31}{6} - \frac{11\times2}{3\times2}$

$\frac{31}{6} - \frac{22}{6}$

$\frac{9}{6}$

$= \frac{3}{2}$

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

Class / Homework

Page 207

Subtraction

4, #5i, ii, #6, #7, #9

5:) $3\frac{5}{1} - \frac{4}{5}$ need C.D

$\frac{15}{5} - \frac{4}{5}$

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

Just subtract by using one of the 2 methods taught in class

(Reminder always to reduce all fractions to lowest terms)

Test in 2 days time

Examples:

$3\frac{7}{8} - 1\frac{3}{5}$

$\frac{31}{8} - \frac{8}{5}$

$\frac{155}{40} - \frac{64}{40}$

$\frac{91}{40}$

$3\frac{7\times5}{8\times5} - 1\frac{3\times8}{5\times8}$

$3\frac{35}{40} - 1\frac{24}{40}$

$2\frac{11}{40}$

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

$\frac{31}{6} - \frac{11\times2}{3\times2}$

$\frac{31}{6} - \frac{22}{6}$

$\frac{9}{6}$ or $\frac{3}{2}$

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

$5\frac{1}{6} - 3\frac{4}{6}$

$4\frac{7}{6} - 3\frac{4}{6}$

$1\frac{3}{6}$ or $1\frac{1}{2}$

Homework
pg 207 #1-5