

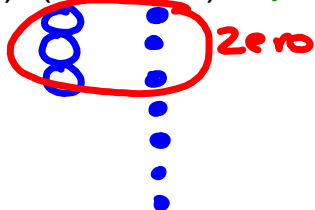


## Warm Up Grade 7



1) Use mental math

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



b)  $(-8) - (-1) = -7$   
 $(-8) + (+1)$

*add* (pointing to -8)  
*opposite* (pointing to -1)

c)  $0.1 \times 78 = 7.8$

$\begin{array}{r} 78 \\ \times 1 \\ \hline 78 \end{array}$

2) Add the following:

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

$= \frac{21 \times 3}{4 \times 3} + \frac{35}{12}$

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

$= \frac{98}{12}$

$= 8 \frac{2}{12}$

$= 8 \frac{1}{6}$

Reduce

Do the back first Then below

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

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

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

(Reminder always to reduce all fractions to lowest terms)

Test Wednesday

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

$\frac{512}{12} + \frac{1}{4} + \frac{11}{12}$

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

$7 + \frac{14}{12}$   
 $7 + 1 \frac{2}{12}$  *mix*

$8 \frac{2}{12}$

$8 \frac{1}{6}$

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1 a)  $1\frac{3}{6} = \frac{9}{6}$  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)  $3\frac{3}{5} = \frac{18}{5}$

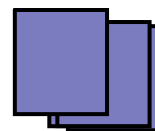
2 a)  $\frac{17}{5} = 3\frac{2}{5}$

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  $4\frac{2}{3}$

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

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

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

$$\frac{37}{6}$$

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

$$5\frac{7}{6}$$

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

$$6\frac{1}{6}$$

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

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

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

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

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

$$\begin{array}{l} \text{a) } 3\frac{1}{2} + \frac{1}{5} \\ 3\frac{5}{10} + \frac{2}{10} \\ 3\frac{7}{10} \end{array}$$

$$\begin{array}{l} \text{b) } \frac{1}{2} + 2\frac{1}{5} \\ \frac{1}{2} + \frac{4}{5} \\ \frac{5}{10} + \frac{22}{10} = 2\frac{7}{10} \end{array}$$

Homework

Pg 20 2# 7-13, Reflect

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\frac{17}{24} + \frac{40}{24}$$

$$= \frac{157}{24}$$

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

$$\frac{12}{5} + \frac{8}{3}$$

$$\frac{36}{15} + \frac{40}{15}$$

$$\frac{76}{15}$$

$$= 5\frac{1}{15}$$

OR

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

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

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

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

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

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

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

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

$$\frac{27}{5} + \frac{15}{4}$$

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

$$\frac{291}{40}$$

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

OR

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

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

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

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

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

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

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

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

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

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

$$\frac{73}{12}$$

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

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?

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

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

$$5\frac{22}{15}$$

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

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

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

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

$$\frac{97}{15}$$

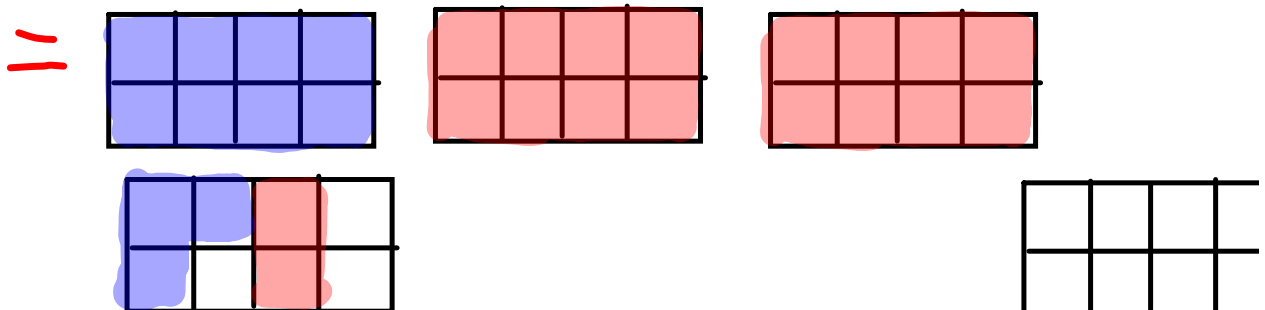
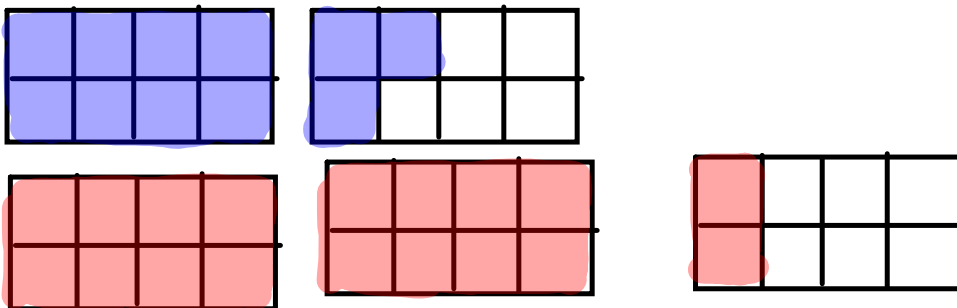
9. **Assessment Focus** Joseph used  $1\frac{3}{8}$  cans of paint to paint his room. Juntia used  $2\frac{1}{4}$  cans to paint her room.
- Estimate how many cans of paint were used in all.
  - Calculate how many cans of paint were used.
  - Draw a diagram to model your calculations in part b.

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

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

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

c)



10. A recipe for punch calls for  $2\frac{2}{3}$  cups of fruit concentrate and  $6\frac{1}{4}$  cups of water.

How many cups of punch will the recipe make?

Show your work.

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

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

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

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

- Add the fractions and the whole numbers separately.
- Write each mixed number as an improper fraction.
- Add the improper fractions.
- Which method was easier: adding the mixed numbers or adding the improper fractions? Why do you think so? When would you use each method?

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

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

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

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

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

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

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

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

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

$$= \frac{37}{10}$$

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

d) As long as you explain



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?

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

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

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

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

13. **Take It Further** Replace the  $\square$  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.

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

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

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

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

USE THIS METHOD

Subtracting

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

You can change to improper fractions, then subtract

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

like before by finding common denominators

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

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

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?)

IF no then borrow

how to borrow

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

$$1 \frac{3}{6} + \frac{5}{6} = 1 \frac{8}{6}$$

$$\begin{aligned} 3 \frac{2}{6} &= 2 + 1 + \frac{2}{6} \\ &= 2 + \frac{6}{6} + \frac{2}{6} \\ &= 2 \frac{8}{6} \end{aligned}$$

Complicated sometimes

$$\begin{aligned} & \underbrace{3}_{-1} - \underbrace{1}_{-1} = 2 \\ & \frac{2}{6} - \frac{5}{6} \\ & \text{Regroup} \\ & 1 + \left[ \left( \frac{6}{6} + \frac{2}{6} \right) - \frac{5}{6} \right] \\ & 1 + \left( \frac{8}{6} - \frac{5}{6} \right) \\ & 1 \frac{3}{6} = 1 \frac{1}{2} \end{aligned}$$

Ex 2) Without having to borrow:

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

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

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

\*IF no then borrow

$$2 \frac{13}{40}$$

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

Your Turn

a)  $\frac{37}{8} - \frac{13}{5}$

$$\begin{aligned} & 5 \times \frac{37}{8} - \frac{8 \times 13}{5 \times 8} \\ & \frac{155}{40} - \frac{64}{40} \end{aligned}$$

$$= \frac{91}{40}$$

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

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

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

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

$$= \frac{9}{6} \quad \begin{matrix} \div 3 \\ \div 3 \end{matrix}$$

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

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

**Examples:**

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

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

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

$$= \frac{91}{40}$$

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

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

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

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

$$\frac{9}{6}$$

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

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

Examples:

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

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

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

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

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

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

$$\frac{91}{40}$$

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

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

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

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

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

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

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


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

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

Homework  
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# *Class / Homework*

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abc

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

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

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

(Reminder always to reduce all fractions to lowest terms)

## Test Wednesday

Examples:

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

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

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

$$\frac{91}{40}$$

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

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

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

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

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

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

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

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

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

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

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

Homework  
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