#2083 GLA	
Guided Learning Activity **Adding Mixed Numerals** Author: Dennis Morrow ∑ **SIGMA-MAC**	This packet contains background information for GLA 2083a, 2083b, etc. It is intended for student and tutor use as needed.

College of the Canyons Mathematics Supplement

Addition with Mixed Numerals

Addition:

Adding mixed numerals is a matter of organizing them so that their fractional parts are together and their whole number parts are together.

$$3\frac{1}{4}+4\frac{1}{3}=\left(3+\frac{1}{4}\right)+\left(4+\frac{1}{3}\right)=(3+4)+\left(\frac{1}{4}+\frac{1}{3}\right)=7+\left(\frac{3}{12}+\frac{4}{12}\right)$$
$$=7+\frac{7}{12}=7\frac{7}{12}$$

The most convenient method of organizing the mixed numerals for addition is to align them vertically, writing the fractions adjusted to their common denominator to the right.

$$\begin{array}{rr} 3\frac{1}{4} & \frac{3}{12} \\ +\,4\frac{1}{3} & \frac{4}{12} \\ \hline 7 & \frac{7}{12} \end{array}$$

This is simple enough, but all answers must be in simple form. Simple form means the fraction in the mixed numeral must be proper and reduced.

$$\begin{array}{rr} 3\frac{3}{4} & \frac{9}{12} \\ +\,4\frac{2}{3} & \frac{8}{12} \\ \hline 7 & \frac{17}{12} \end{array} = 7+1\frac{5}{12}=8\frac{5}{12}$$

The fraction $\frac{17}{12}$ was not proper, so it was converted to a simple mixed numeral, and then its whole number part was combined with the other whole number. $8\frac{5}{12}$ is a simplified version of $7\frac{17}{12}$, and it is the final answer.

Examples of Addition:

$13\frac{3}{4}+4\frac{2}{5}$

$$\begin{array}{rll} 13\frac{3}{4} & \frac{15}{20} \\ +\,4\frac{2}{5} & \frac{8}{20} \\ \hline 17 & \frac{23}{20} \end{array} = 17+1\frac{3}{20} = 18\frac{3}{20}$$

$24\frac{7}{8}+15\frac{5}{6}$

$$\begin{array}{rll} 24\frac{7}{8} & \frac{21}{24} \\ +15\frac{5}{6} & \frac{20}{24} \\ \hline 39 & \frac{41}{24} \end{array} = 39+1\frac{17}{24} = 40\frac{17}{24}$$

$25\frac{2}{3}+6\frac{3}{5}$

$$\begin{array}{rll} 25\frac{2}{3} & \frac{10}{15} \\ +\,6\frac{3}{5} & \frac{9}{15} \\ \hline 31 & \frac{19}{15} \end{array} = 31+1\frac{4}{15} = 32\frac{4}{15}$$

$24\frac{1}{9}+85\frac{1}{18}$

$$\begin{array}{rll} 24\frac{1}{9} & \frac{2}{18} \\ +85\frac{1}{18} & \frac{1}{18} \\ \hline 109 & \frac{3}{18} \end{array} = 109\frac{1}{6}$$

$13\frac{3}{4}+25\frac{2}{3}+6\frac{5}{6}$

$$\begin{array}{rll} 13\frac{3}{4} & \frac{9}{12} \\ 25\frac{2}{3} & \frac{8}{12} \\ +\,6\frac{5}{6} & \frac{10}{12} \\ \hline 44 & \frac{27}{12} \end{array} = 44+2\frac{3}{12} = 46\frac{1}{4}$$

$24\frac{7}{8}+24\frac{7}{9}+85\frac{13}{18}$

$$\begin{array}{rll} 24\frac{7}{8} & \frac{63}{72} \\ 24\frac{7}{9} & \frac{56}{72} \\ +85\frac{13}{18} & \frac{52}{72} \\ \hline 133 & \frac{171}{72} \end{array} = 133+2\frac{27}{72} = 135\frac{3}{8}$$

#2083a GLA	Student:_____
Guided Learning Activity **Adding Mixed Numerals, Exercise Set #1** Author: Dennis Morrow ∑ **SIGMA-MAC**	Course Instructor:_____ Date Completed:_____ Approved:_____

Addition with Mixed Numerals, Exercise Set #1

Addition:

Adding mixed numerals is a matter of organizing them so that their fractional parts are together and their whole number parts are together.

$$3\frac{1}{4}+4\frac{1}{3}=\left(3+\frac{1}{4}\right)+\left(4+\frac{1}{3}\right)=(3+4)+\left(\frac{1}{4}+\frac{1}{3}\right)=7+\left(\frac{3}{12}+\frac{4}{12}\right)$$
$$=7+\frac{7}{12}=7\frac{7}{12}$$

The most convenient method of organizing the mixed numerals for addition is to align them vertically, writing the fractions adjusted to their common denominator to the right.

$$\begin{array}{rr} 3\frac{1}{4} & \frac{3}{12} \\ +\,4\frac{1}{3} & \frac{4}{12} \\ \hline 7 & \frac{7}{12} \end{array}$$

This is simple enough, but all answers must be in simple form. Simple form means the fraction in the mixed numeral must be proper and reduced.

$$\begin{array}{rr} 3\frac{3}{4} & \frac{9}{12} \\ +\,4\frac{2}{3} & \frac{8}{12} \\ \hline 7 & \frac{17}{12} \end{array}=7+1\frac{5}{12}=8\frac{5}{12}$$

The fraction $\frac{17}{12}$ was not proper, so it was converted to a simple mixed numeral, and then its whole number part was combined with the other whole number. $8\frac{5}{12}$ is a simplified version of $7\frac{17}{12}$, and it is the final answer.

Exercises:

1. $36\frac{8}{9}+25\frac{7}{8}$

The LCD = 72. $72/9=8, 72/8=9$. Fill in the blanks.

$$\begin{array}{r} 36\frac{8}{9}\ \ \frac{\quad}{72} \\ +25\frac{7}{8}\ \ \frac{\quad}{72} \\ \hline \quad\quad\ \ \frac{\quad}{72}=\quad+\quad\frac{\quad}{72}=\quad\frac{\quad}{72} \end{array} \qquad 62\frac{55}{72}$$

Ans: _____

2. $25\frac{19}{24}+8\frac{15}{16}+11\frac{25}{48}$

The LCD = 48. $48/24=2, 48/16=3$, and $48/48=1$. Fill in the blanks.

$$\begin{array}{r} 25\frac{19}{24}\ \ \frac{\quad}{48} \\ 8\frac{15}{16}\ \ \frac{\quad}{48} \\ +\ 11\frac{25}{48}\ \ \frac{\quad}{48} \\ \hline \quad\quad\ \ \frac{\quad}{48}=\quad+\quad\frac{\quad}{48}=46\frac{12}{48} \end{array} \qquad 46\frac{1}{4}$$

Ans: _____

Simplify the following completely. Execute the problems using mixed numerals, and write the answers as mixed numerals.

3. $48\frac{31}{48}+31\frac{7}{16}$ LCD=_____

Ans:_____

4. $42\frac{2}{3}+21\frac{5}{6}$ LCD=_____

Ans:_____

$80\frac{1}{12}, 64\frac{1}{2}$

5. $53\frac{7}{9}+23\frac{11}{36}$ LCD=_____

Ans:_____

6. $73\frac{11}{24}+25\frac{11}{12}$ LCD=_____

Ans:_____

7. $65\frac{5}{6}+17\frac{8}{27}$ LCD=_____

Ans:_____

8. $35\frac{20}{21}+21\frac{5}{7}$ LCD=_____

Ans:_____

$77\frac{1}{12}, 99\frac{3}{8}, 83\frac{7}{54}, 57\frac{2}{3}$

9. $21\frac{7}{9}+31\frac{7}{45}+48\frac{7}{25}$ LCD=_____

Ans:_____

10. $24\frac{7}{9}+31\frac{7}{16}+43\frac{7}{48}$ LCD=_____

Ans:_____

11. $1\frac{3}{4}+2\frac{3}{5}+1\frac{22}{25}+3\frac{1}{50}$ LCD=_____

Ans:_____

12. $1\frac{5}{12}+1\frac{1}{5}+1\frac{7}{15}+1\frac{5}{48}$ LCD=_____

Ans:_____

$101\frac{16}{75}, 99\frac{13}{36}, 9\frac{1}{4}, 5\frac{3}{16}$

#2083b GLA	Student:_____
Guided Learning Activity **Adding Mixed Numerals, Exercise Set #2** Author: Dennis Morrow ∑ **SIGMA-MAC**	Course Instructor:_____ Date Completed:_____ Approved:_____

Addition with Mixed Numerals, Exercise Set #2

Addition:

Adding mixed numerals is a matter of organizing them so that their fractional parts are together and their whole number parts are together.

$$3\frac{1}{4}+4\frac{1}{3}=\left(3+\frac{1}{4}\right)+\left(4+\frac{1}{3}\right)=(3+4)+\left(\frac{1}{4}+\frac{1}{3}\right)=7+\left(\frac{3}{12}+\frac{4}{12}\right)$$
$$=7+\frac{7}{12}=7\frac{7}{12}$$

The most convenient method of organizing the mixed numerals for addition is to align them vertically, writing the fractions adjusted to their common denominator to the right.

$$\begin{array}{rr} 3\frac{1}{4} & \frac{3}{12} \\ +\,4\frac{1}{3} & \frac{4}{12} \\ \hline 7 & \frac{7}{12} \end{array}$$

This is simple enough, but all answers must be in simple form. Simple form means the fraction in the mixed numeral must be proper and reduced.

$$\begin{array}{rr} 3\frac{3}{4} & \frac{9}{12} \\ +\,4\frac{2}{3} & \frac{8}{12} \\ \hline 7 & \frac{17}{12} \end{array}=7+1\frac{5}{12}=8\frac{5}{12}$$

The fraction $\frac{17}{12}$ was not proper, so it was converted to a simple mixed numeral, and then its whole number part was combined with the other whole number. $8\frac{5}{12}$ is a simplified version of $7\frac{17}{12}$, and it is the final answer.

Exercises:

1. $37\frac{7}{9}+28\frac{5}{8}$

The LCD = 72. $72/9=8, 72/8=9$. Fill in the blanks.

$$37\frac{7}{9}\ \ \frac{\quad}{72}$$
$$+28\frac{5}{8}\ \ \frac{\quad}{72}$$

$66\frac{29}{72}$

$\_\_\_\ \ \frac{\quad}{72}=\_\_\_+\_\_\_\frac{\quad}{72}=\_\_\_\frac{\quad}{72}$

Ans: _____

2. $35\frac{22}{25}+18\frac{11}{15}+11\frac{11}{75}$

The LCD = 75. $75/25=3, 75/15=5$, and $75/75=1$. Fill in the blanks.

$$35\frac{22}{25}\ \ \frac{\quad}{75}$$
$$18\frac{11}{15}\ \ \frac{\quad}{75}$$
$$+\ 11\frac{11}{75}\ \ \frac{\quad}{75}$$

$65\frac{19}{25}$

$\_\_\_\ \ \frac{\quad}{75}=\_\_\_+\_\_\_\frac{\quad}{75}=65\frac{57}{75}$

Ans: _____

Simplify the following completely. Execute the problems using mixed numerals, and write the answers as mixed numerals.

3. $84\frac{5}{6}+31\frac{7}{24}$ LCD=_____

Ans:_____

4. $41\frac{2}{3}+26\frac{8}{15}$ LCD=_____

Ans:_____

$116\frac{1}{8}, 68\frac{1}{5}$

5. $73\frac{25}{27}+23\frac{11}{18}$ LCD=_____

Ans:_____

6. $73\frac{4}{5}+25\frac{6}{7}+15\frac{32}{35}$ LCD=_____

Ans:_____

7. $75\frac{3}{4}+21\frac{1}{6}+15\frac{7}{12}$ LCD=_____

Ans:_____

8. $35\frac{20}{21}+21\frac{5}{7}+12\frac{29}{42}$ LCD=_____

Ans:_____

$97\frac{29}{54}, 115\frac{4}{7}, 112\frac{1}{2}, 70\frac{5}{14}$

9. $22\frac{8}{9}+41\frac{2}{3}+57\frac{25}{36}$ LCD=_____

Ans:_____

10. $34\frac{2}{3}+21\frac{2}{15}+23\frac{3}{4}$ LCD=_____

Ans:_____

11. $1\frac{1}{2}+2\frac{2}{5}+1\frac{1}{10}+2\frac{6}{7}$ LCD=_____

Ans:_____

12. $1\frac{1}{3}+\frac{5}{6}+3\frac{8}{15}+1\frac{2}{7}$ LCD=_____

Ans:_____

$122\frac{1}{4}, 79\frac{11}{20}, 7\frac{6}{7}, 6\frac{69}{70}$

#2083c GLA	Student:_____
Guided Learning Activity **Adding Mixed Numerals, Exercise Set #3** Author: Dennis Morrow ∑ **SIGMA-MAC**	Course Instructor:_____ Date Completed:_____ Approved:_____

Addition with Mixed Numerals, Exercise Set #3

Addition:

Adding mixed numerals is a matter of organizing them so that their fractional parts are together and their whole number parts are together.

$$3\frac{1}{4}+4\frac{1}{3}=\left(3+\frac{1}{4}\right)+\left(4+\frac{1}{3}\right)=(3+4)+\left(\frac{1}{4}+\frac{1}{3}\right)=7+\left(\frac{3}{12}+\frac{4}{12}\right)$$
$$=7+\frac{7}{12}=7\frac{7}{12}$$

The most convenient method of organizing the mixed numerals for addition is to align them vertically, writing the fractions adjusted to their common denominator to the right.

$$\begin{array}{rr} 3\frac{1}{4} & \frac{3}{12} \\ +\,4\frac{1}{3} & \frac{4}{12} \\ \hline 7 & \frac{7}{12} \end{array}$$

This is simple enough, but all answers must be in simple form. Simple form means the fraction in the mixed numeral must be proper and reduced.

$$\begin{array}{rr} 3\frac{3}{4} & \frac{9}{12} \\ +\,4\frac{2}{3} & \frac{8}{12} \\ \hline 7 & \frac{17}{12} \end{array}=7+1\frac{5}{12}=8\frac{5}{12}$$

The fraction $\frac{17}{12}$ was not proper, so it was converted to a simple mixed numeral, and then its whole number part was combined with the other whole number. $8\frac{5}{12}$ is a simplified version of $7\frac{17}{12}$, and it is the final answer.

Exercises:

1. $25\frac{4}{9}+17\frac{7}{8}$

The LCD = 72. $72/9=8, 72/8=9$. Fill in the blanks.

$$25\frac{4}{9}\ \ \frac{\quad}{72}$$
$$+17\frac{7}{8}\ \ \frac{\quad}{72}$$

$43\frac{23}{72}$

$$\_\_\_\ \ \frac{\quad}{72}=\_\_\_+\_\_\_\frac{\quad}{72}=\_\_\_\frac{\quad}{72}$$

Ans: _____

2. $37\frac{5}{6}+18\frac{15}{16}+12\frac{2}{3}$

The LCD = 48. $48/6=8, 48/16=3$, and $48/3=16$. Fill in the blanks.

$$35\frac{22}{25}\ \ \frac{\quad}{48}$$
$$18\frac{11}{15}\ \ \frac{\quad}{48}$$
$$+\ 11\frac{11}{75}\ \ \frac{\quad}{48}$$

$69\frac{7}{16}$

$$\_\_\_\ \ \frac{\quad}{48}=\_\_\_+\_\_\_\frac{\quad}{48}=69\frac{\quad}{48}$$

Ans: _____

Simplify the following completely. Execute the problems using mixed numerals, and write the answers as mixed numerals.

3. $84\frac{2}{3}+34\frac{17}{24}$ LCD=_____

Ans:_____

4. $45\frac{2}{3}+36\frac{10}{21}$ LCD=_____

Ans:_____

$119\frac{3}{8}, 82\frac{1}{7}$

5. $93\frac{23}{24} + 23\frac{13}{15}$ LCD=_____

Ans:_____

6. $72\frac{3}{4} + 27\frac{7}{8} + 18\frac{11}{12}$ LCD=_____

Ans:_____

7. $58\frac{13}{15} + 23\frac{3}{5} + 15\frac{17}{25}$ LCD=_____

Ans:_____

8. $47\frac{19}{36} + 35\frac{1}{18} + 21\frac{13}{24}$ LCD=_____

Ans:_____

$117\frac{33}{40}, 119\frac{13}{24}, 98\frac{11}{75}, 104\frac{1}{8}$

9. $47\frac{3}{4}+78\frac{22}{25}+64\frac{9}{20}$ LCD=_____

Ans:_____

10. $36\frac{6}{7}+67\frac{1}{4}+45\frac{5}{12}$ LCD=_____

Ans:_____

11. $1\frac{5}{14}+1\frac{1}{2}+2\frac{5}{7}+1\frac{40}{49}$ LCD=_____

Ans:_____

12. $2\frac{8}{9}+1\frac{4}{5}+\frac{13}{15}+2\frac{2}{3}$ LCD=_____

Ans:_____

$191\frac{2}{25}, 149\frac{11}{21}, 7\frac{19}{49}, 8\frac{2}{9}$