



Teaching and Learning of the Nemeth Braille Code

- Fraction and Fraction Indicators
- Mixed Numbers
- Complex Fractions
- Spatial Arrangement for Fractions
- Addition & Subtraction Involving Fractions
- Arrangements containing Mixed Numbers
- Cancellation

Fractions and Fraction Indicators Review

- Simple Fractions w/ the horizontal line
 - $\frac{1}{2}$ $\frac{3}{4}$ $\frac{5}{6}$ (th st NI) (this still NI)
- Simple Fractions w/ the slanted line
 - $\frac{1}{2}$ $\frac{3}{4}$ $\frac{5}{6}$
- Mixed Numbers w/ the horizontal line
 - $1\frac{1}{2}$ $2\frac{3}{4}$ $3\frac{5}{6}$ $4\frac{7}{8}$
- Mixed Numbers w/ the slanted line
 - $1\frac{1}{2}$ $2\frac{3}{4}$ $3\frac{5}{6}$ $4\frac{7}{8}$



Examples

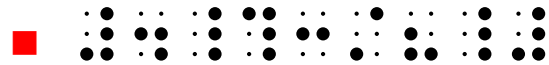
- Simple Fractions w/ the horizontal line

-  $\frac{1}{3}$

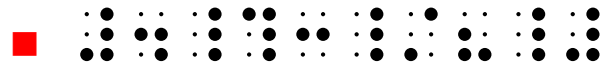
- Simple Fractions w/ the slanted line

-  $\frac{1}{3}$

- Mixed Numbers w/ the horizontal line

-  $4\frac{3}{8}$

- Mixed Numbers w/ the slanted line

-  $4\frac{3}{8}$



Complex Fraction

- Use a dot 6 before the simple fraction indicators. $\ddot{\cdot}$ $\ddot{\cdot}$ $\ddot{\cdot}$ $\ddot{\cdot}$
- If there is a mixed number in the numerator or denominator, the numeric indicator on the whole part is dropped because of the spatial arrangement.
- Never use numeric indicators inside of fraction indicators.

Examples

8

4

5

2

7

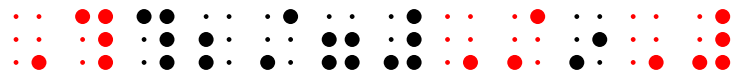
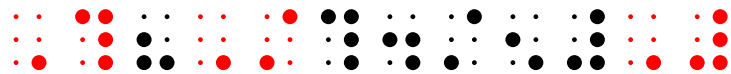
9

1

8

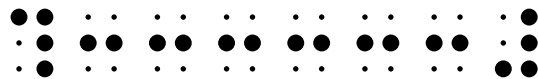
3

7



Spatial Arrangements for Fractions

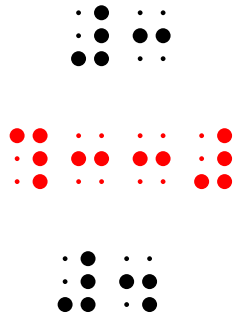
- Use a numeric indicator before the numerator and denominator if they are numerical.
- Use the simple fraction indicator with a separation line (dots 2-5) the same length as the longest expression above or below it.



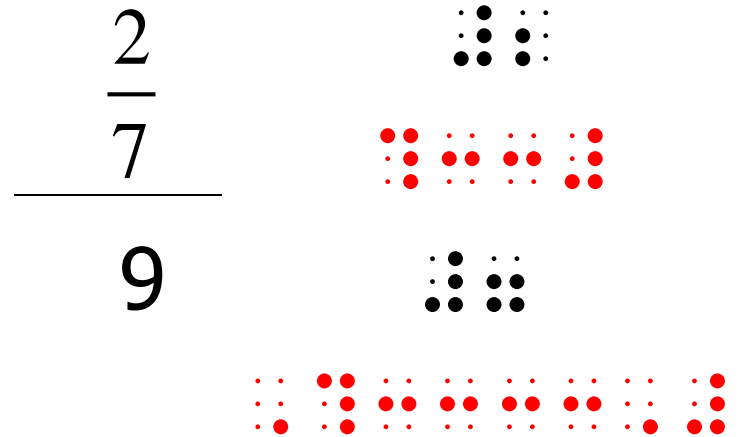


Examples

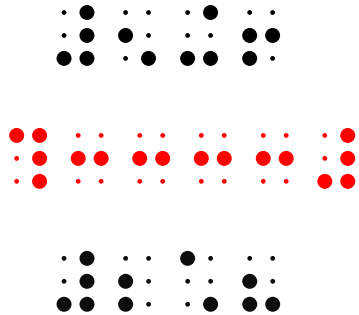
$$\frac{3}{4}$$



$$\frac{2}{7}$$



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



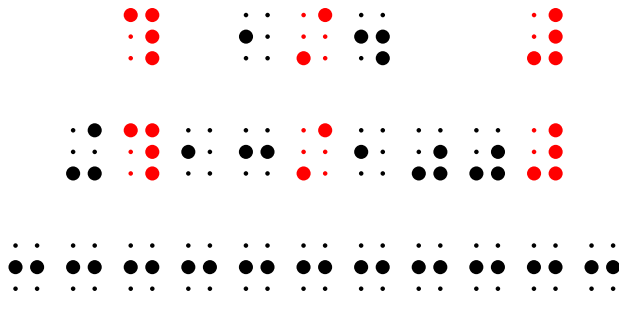
Addition and Subtraction Involving Fractions

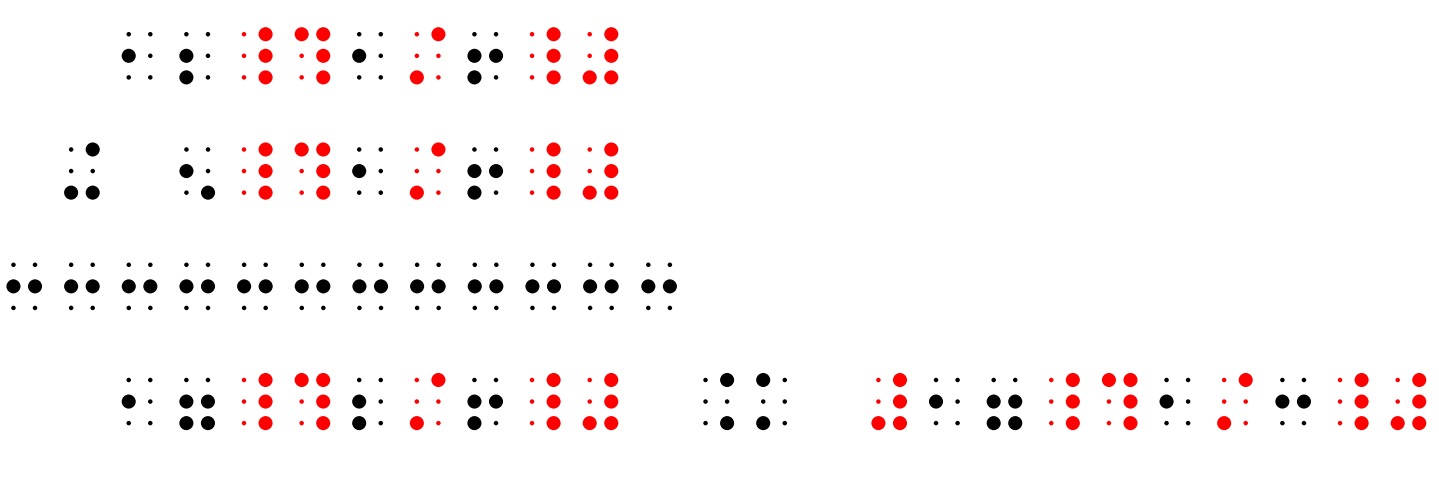


- Put fractions in linear form.
- Align fraction lines and fraction indicators.
- Place numerators and denominators closest to fraction lines.
- Addition and subtraction symbols are placed one cell to the left of the left most cell in the problem.
- Separation lines are still one extra cell to the left and right of the cells in the problem.



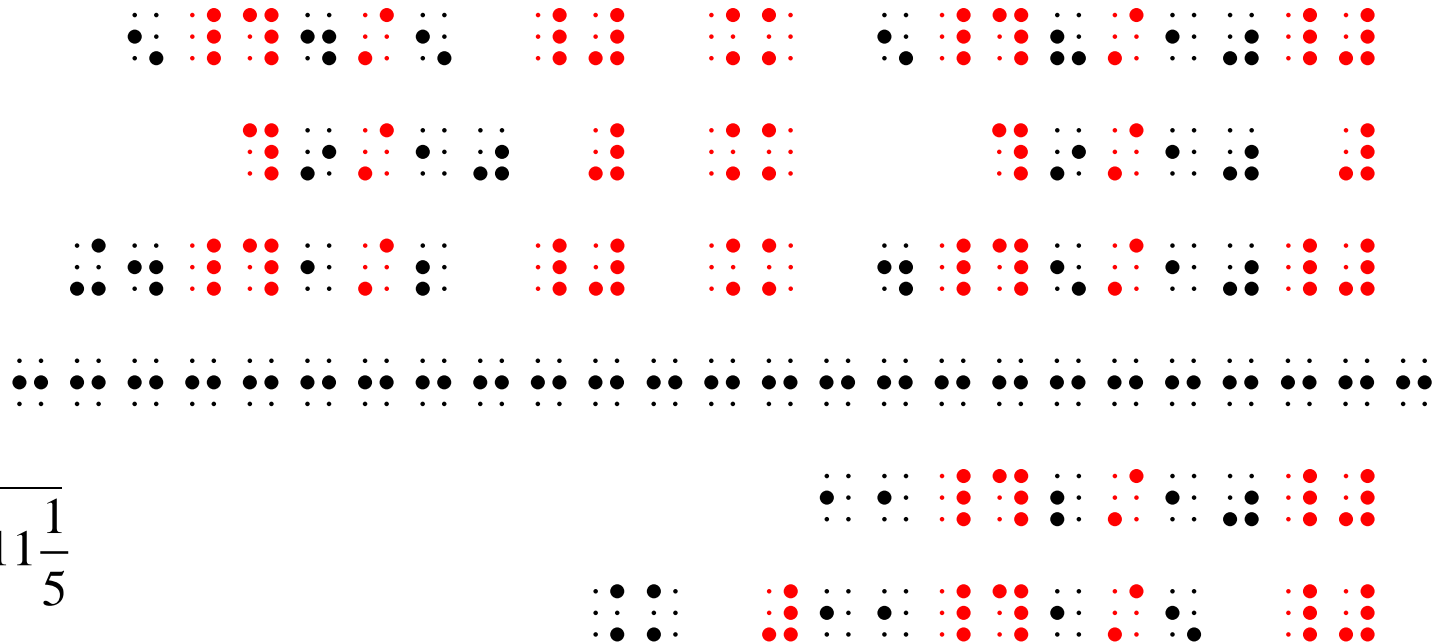
Examples

$$\frac{1}{4} + \frac{13}{100}$$


$$12\frac{1}{6} + 5\frac{1}{6} = 17\frac{2}{6} = 17\frac{1}{3}$$


Example Involving Finding Common Denominators

$$\begin{array}{r}
 5\frac{4}{5} = 5\frac{8}{10} \\
 \frac{9}{10} = \frac{9}{10} \\
 + 4\frac{1}{2} = 4\frac{5}{10} \\
 \hline
 11\frac{2}{10} = 11\frac{1}{5}
 \end{array}$$





Cancellation Indicators

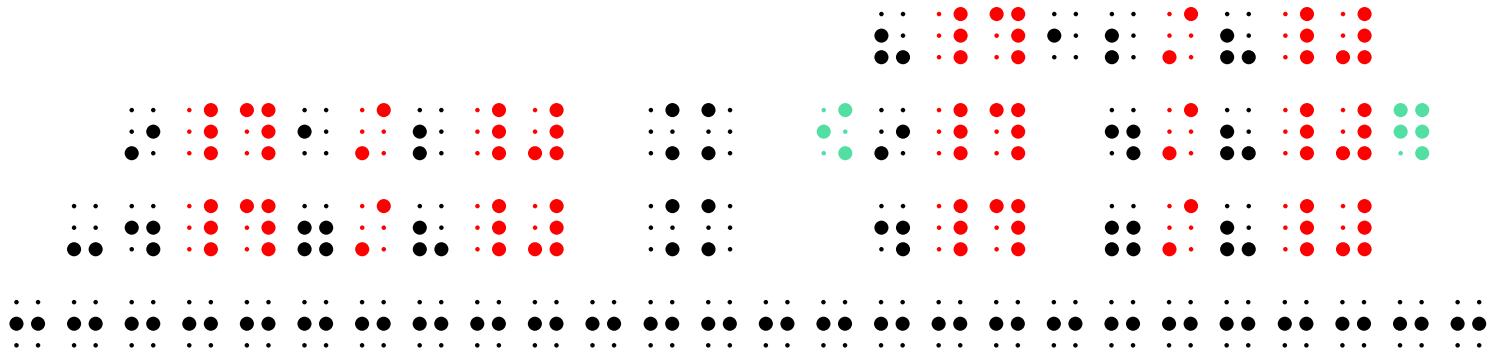
- Begin cancellation with dots 2-4-6 (ow) and end with dots 1-2-4-5-6 (er, termination indicator). Put these around what is being cancelled. ∴ ∴

Examples

$$8\frac{12}{8}$$

$$9\frac{1}{2} = 9\frac{4}{8}$$

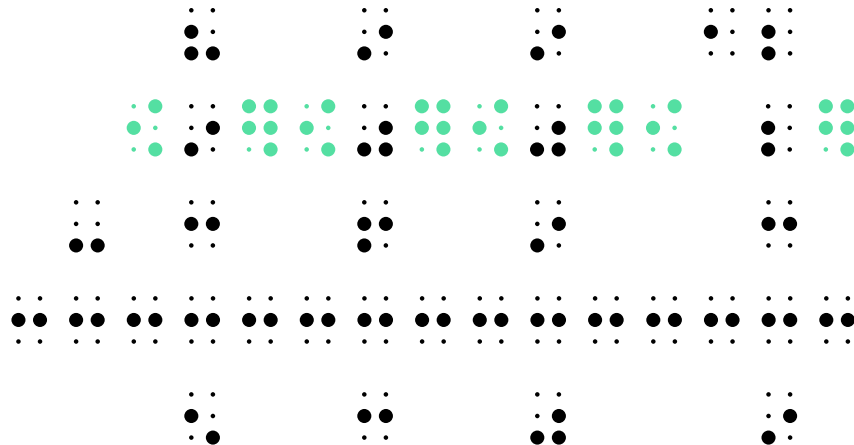
$$-4\frac{7}{8} = 4\frac{7}{8}$$



$$89912$$

~~$$9002$$~~

$$-3693$$





Assignment

- p.16 all
- p.17 do 2 in both sets of Practice Exercises
- p.18 do the last one in both linear & spatial format.
- Transcribe like p. 25

$$23 \frac{5}{6} = 23 \frac{10}{12}$$

$$-10 \frac{7}{12} = 10 \frac{7}{12}$$

$$13 \frac{3}{12} = 13 \frac{1}{4}$$

- Transcribe $\frac{20}{25}$ using the spatial arrangement and then simplify to $\frac{4}{5}$ using cancellation indicators like p.21.
- Solve and transcribe $\frac{327}{-154}$ using cancellation indicators like p. 22.