Operations with Mixed Numbers

➢ Convert all mixed numbers into improper fractions.
➢ Reduce individual fractions if possible.
➢ Follow BEDMAS when carrying out the given operations.
➢ Reduce the final answer and convert it to a mixed number if possible.

❖ **Remember** to change division to multiplication and reciprocate the fraction that is immediately after the division symbol. (keep, kiss, flip)
❖ **Remember** to simplify diagonally **only** if fractions have a **multiplication** symbol between them.

A negative mixed number turns into a negative improper fraction.
The rules of conversion of mixed numbers to improper fractions remain the same.
There is NO subtraction in the process.

$$-5\frac{2}{7} = -\frac{37}{7}$$

$$\times 7 = 35$$

① move the Negative over
   (cancels original negative)
② Multiply the big number by The denominator
③ add the product to the numerator

Move the Negative over

$$-8\frac{1}{7} = -\frac{57}{7}$$

Solve

1. $4\frac{1}{3} \times 12 = \dfrac{13}{3_1} \times \dfrac{12^4}{1}$

    $= \dfrac{13}{1} \times \dfrac{4}{1}$

    $= \dfrac{52}{1}$

    $= \boxed{52}$

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2. $1\frac{3}{4} \div 7\frac{3}{5} =$ $\frac{7}{4} \div \frac{38}{5}$

$$= \frac{7}{4} \times \frac{5}{38}$$

$$= \boxed{\frac{35}{152}}$$

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3. $\frac{3}{4} + 6\frac{1}{8} =$ $\frac{3}{4} + \frac{49}{8}$!! No diagonal reducing with addition !! (Find common denominator)

4: 4, $\underline{8}$, 12

8: $\underline{8}$

$\frac{3}{4}\overset{\times 2}{\underset{\times 2}{}} + \frac{49}{8}$

$= \frac{6}{8} + \frac{49}{8}$ $= \frac{6+49}{8}$ $= \frac{55}{8}$ $= \boxed{6\frac{7}{8}}$

$55 \div 8 = 6.875$

$55 - [6 \times 8]$

$55 - 48 = 7$

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4. $-2\frac{1}{4} \div 3\frac{4}{9} =$ $-\frac{9}{4} \div \frac{31}{9}$

keep, kiss, flip

$= -\frac{9}{4} \times \frac{9}{31}$

$= \frac{9 \times 9}{4 \times 31}$

$= \boxed{\frac{81}{124}}$

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