CHAPTER 3. FRACTIONS （分数）

$\frac{a}{b}$ **= a ÷ b , b ≠ 0** **Fraction =** $\frac{Numerator}{Denominator}$

Example 1: Equivalent Fractions

$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$ $\frac{a}{b} = \frac{a\,x\,c}{b\,x\,c} = \frac{a \div c}{b \div c}$, b $\neq 0$, c $\neq 0$

Example 2:

Express $\frac{5}{12}$ and $\frac{4}{9}$ to a common denominator.

Solution: LCM of 12 and 9 is 36.

$\frac{5}{12} = \frac{5\,x\,3}{12\,x\,3} = \frac{15}{36}$ $\frac{4}{9} = \frac{4\,x\,4}{9\,x\,4} = \frac{16}{36}$

- Proper Fraction = A fraction whose numerator is less than its denominator. ($\frac{3}{4}$)
- Improper Fraction = A fraction whose numerator is greater than or equal to the denominator. ($\frac{8}{5}$ and $\frac{9}{9}$).
- Mixed Number=A number that contains an integer part and a fractional part.($1\frac{7}{10}$)

$\frac{dividend\ (numerator)}{divisor\ (denominator)}$ = quotient + $\frac{remainder}{divisor}$

Example 3:

Express $\frac{37}{14}$ as a mixed number.

Solution: $\frac{37}{14} = 2\frac{9}{14}$

Comparing Fractions

- Same denominators, compare the numerators. ($\frac{5}{8}$ and $\frac{3}{8}$)
- Same numerators, compare the denominators. ($\frac{2}{3}$ and $\frac{2}{5}$)
- Different denominators, make the denominators the same before comparing. ($\frac{4}{7}$ and $\frac{3}{8}$)

Addition and Subtraction of fractions

$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$ and $\frac{a}{c} - \frac{b}{c} = \frac{a-b}{c}$