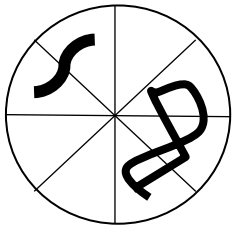
Chapter 4 sec 4
Add – Sub fractions

Pizza cut into 8 equal parts.
P eats 2 T eats 3

Ate 5 slices



Common denominator
add, sub tops, leave the bottom

$\frac{2}{8}+\frac{3}{8}$ $\frac{13}{16}-\frac{5}{16}$ $\frac{3}{8}-\left(\frac{-7}{8}\right)$

Add subtract

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

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

Different denominator

$\frac{4}{9}+\frac{1}{6}$ Find a common denominator – least common multiple – Lowest common denominator

Smallest number that is divisible by each denominator
Find multiples of each number and find the smallest that is common to both

9: 9 18 27 36 45
6: 6 12 18 24 30

Notice that 18 is common to both and is the smallest

$\frac{4}{9}+\frac{1}{6}$ so rewrite each fraction with the denominator of 18

$\frac{4\bullet 2}{18}+\frac{1\bullet 3}{18}$ since 9 • 2 = 18 and 6 • 3 = 18

$\frac{8}{18}+\frac{3}{18}$ simplify

Least common multiple: 12 and 16 18 and 24

12: 12 24 36 48 60 72 84 96

16: 16 32 48 64 80 96

The common: 48 96
Least common: 48

Using prime factorization:
Find the prime factorization of both numbers
Write each base and write the highest exponent

12: $2^2\bullet 3$
16: 2^4 bases: 2 • 3 highest exponent: $2^4\bullet 3$

$\frac{4}{9}+\frac{1}{6}$ $\frac{3}{5}-\frac{2}{3}$ $\frac{1}{4}-\frac{5}{6}$ $\frac{5}{28}+\frac{4}{42}$

$\frac{5}{6}-\frac{4}{5}$ $-\frac{1}{4}-\left(-\frac{4}{9}\right)$

Compare fractions
create equivalent fractions number line – same denominators

$-\frac{1}{2}$ $-\frac{4}{5}$