

## LCD: Lowest Common Denominator

What do you do if you need to add  $1/3$  to  $1/10$  ? They don't have the same denominators. It would be easier to do if they had the same denominators. When we can we prefer to use the lowest denominator possible.

To do this we:

- 1.) find the least common multiple (LCM) [ see previous sheet], and then,
- 2.) multiply each fraction by one to create the current denominator.
- 3.) Then we can add or subtract the fractions with the same denominator.

Ex.  $1/3 + 1/10 = ?$

- 1.) LCM (3,10):  $3 \times 2 \times 5 = 30$ ; LCD = 30
- 2.) Multiply  $1/3$  by  $10/10$  (any # divided by itself = 1, anything  $\times 1$  hasn't changed. It is the same #).  $1/3 \times 10/10 = 10/30$
- 3.) Multiply  $1/10$  by  $3/3$  ( $3/3 = 1$ ) ;  $1/10 \times 3/3 = 3/30$
- 4.)  $1/3 + 1/10 = 10/30 + 3/30 = 13/30$

ex.  $1/2 + 1/12 = ?$

- 1.) LCM (2,12):  $2 \times 2 \times 3 = 12$ ; LCD = 12
- 2.) Multiply  $1/2$  by  $6/6$ .  $1/2 \times 6/6 = 6/12$
- 3.)  $1/2 + 1/12 = 6/12 + 1/12 = 7/12$ .

**Exercises:** find the Lowest common denominator and then solve the addition or subtraction.

- 1.)  $1/2 + 1/3 = ?$
- 2.)  $2/3 + 1/6 = ?$
- 3.)  $1/5 + 1/7 = ?$
- 4.)  $1/9 + 2/3 = ?$
- 5.)  $1/3 + 1/4 = ?$
- 6.)  $1/5 + 2/3 = ?$
- 7.)  $2/3 - 1/4 = ?$
- 8.)  $1/2 - 1/5 = ?$
- 9.)  $1/2 - 1/3 = ?$
- 10.)  $7/10 - 1/2 = ?$