## 717 NewPath

## ADDING AND SUBTRACTING FRACTIONS

## What Is Adding and Subtracting Fractions with Unlike Denominators?

- Fractions can only be added or subtracted if the denominators are the same. For instance, $7 / 9+1 / 9=8 / 9$ or $11 / 13-6 / 13=5 / 13$
- In order to add or subtract two fractions with unlike denominators, one or more must be changed to an equivalent fraction.

To solve $2 / 3+1 / 9$, first change $2 / 3$ to $\mathrm{n} / 9$ by multiplying times $3 / 3$ (which is 1 ). Then solve, $6 / 9+1 / 9$. The sum is $7 / 9$.


- Multiply each fraction by a fraction equal to one.

For example, $5 / 5$ or $3 / 3$ is equal to one, so the denominators are the same.

## The LCD for 2/3 and $\mathbf{1 / 4}$ is 12

a. Multiply $2 / 3 \times 4 / 4 \rightarrow 8 / 12$
b. Multiply $1 / 4 \times 3 / 3 \rightarrow 3 / 12$
c. Add $8 / 12+3 / 12=11 / 12$

- Just as you cannot add 6 oranges and 4 bananas and have 10 oranges/bananas, you cannot add 7/9 $+2 / 10$ and have 9/19.

Note: Only fractions with like denominators can be added or subtracted.

- Here are two examples:
. $4 / 7+2 / 5 \rightarrow 20 / 35+14 / 35=34 / 35$
Change both denominators to 35 .
o $7 / 8-1 / 2 \rightarrow 7 / 8-4 / 8=3 / 8$
Change $1 / 2$ to $4 / 8$ because 2 is a factor of 8 .

$4 / 7+1 / 4=$
$7 / 8-2 / 7=$

