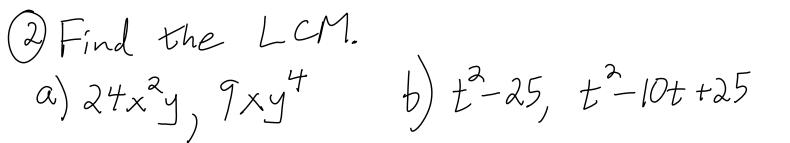
Addition and Subtraction with Like Denominators To add or subtract when denominators are the same, add or subtract the numerators and keep the same denominator.

$$\frac{A}{C} + \frac{B}{C} = \frac{A+B}{C}$$
 and  $\frac{A}{C} - \frac{B}{C} = \frac{A-B}{C}$ , where  $C \neq 0$ 

a) 
$$\frac{5}{3a} + \frac{7}{3a}$$

$$t) \frac{a-5b}{a+b} + \frac{a+7b}{a+b}$$

**Least Common Multiple** To find the least common multiple (LCM) of two or more expressions, find the prime factorization of each expression and form a product that contains each factor the greatest number of times that it occurs in any one prime factorization.



## To Add or Subtract Rational Expressions

- Determine the least common denominator (LCD) by finding the least common multiple of the denominators.
- Rewrite each of the original rational expressions, as needed, in an equivalent form that has the LCD.
- 3. Add or subtract the resulting rational expressions, as indicated.
- Simplify the result, if possible, and list any restrictions, on the domain of functions.

3) Add or Subtract. Always simplify if possible.

a) 
$$\frac{a+3}{a-5} + \frac{a-2}{a+4}$$

$$\frac{7}{3y^{2}+y^{4}} + \frac{9y+2}{3y^{2}-2y-8}$$

$$\frac{m-3n}{m^3-n^3}-\frac{2n}{n^3-m^3}$$

$$\frac{1}{y+2} + \frac{5}{y-2} + \frac{y+3}{y^2-4}$$

$$F)\frac{5x}{x^2-6x+8}-\frac{3x}{x^2-x-1}$$

3) 
$$\frac{x-1}{x^2-1} - \frac{x}{x-2} + \frac{x^2+2}{x^2-x-2}$$