Finding the Least Common Denominator

**Least Common Multiple: (LCM)**

What is the LCM of 12 and 18? What is the LCM of 9 and 6?

**Different Denominators**

When adding or subtracting fractions that have different denominators, one must find the least common denominator (LCD) before adding or subtracting the fractions.

Process to find the LCD:

1. Factor each denominator OR Just know their least common multiple.
2. Write down one of every kind of factor.
3. Raise each factor to its highest power.

Find the LCD (you do NOT need to add or subtract):

1. \( \frac{5}{24} - \frac{7}{36} \)  
2. \( \frac{5}{6x^3y^2} + \frac{7}{4x^4y^5} \)
3. \( \frac{3}{8x} + \frac{11}{16} - \frac{1}{x} \)  
4. \( \frac{3y}{4x} - \frac{2y}{5x^2} \)
5. \( \frac{7}{3x-1} - \frac{2}{x-4} \)  
6. \( \frac{3x}{3x-2} - \frac{5}{4x} \)

7. \( \frac{x}{x^2+9x+20} + \frac{5x}{x^2+3x-4} \)

1. Factor each denominator
2. Write down one of every kind of factor.
3. Raise each factor to its highest power.