1. Combine into a fraction in simplest form. Expand everything.

a. $\dfrac{4}{x-2} + \dfrac{3}{2x+3} - \dfrac{1}{x+2}$

b. $\dfrac{2x}{2x^2+5x-3} + \dfrac{3x-2}{3x^2+13x+12}$

c. $\left(\dfrac{2x^2+5x-3}{2x^2+x-1}\right)\left(\dfrac{3x^2+5x+2}{4x^2+11x-3}\right)$

d. $\dfrac{\left(\dfrac{(3x-2)^3}{6x^2-x-2}\right)}{\left(\dfrac{3x^2-17x+10}{2x^2-7x-4}\right)}$

2. Find the values of a and b such that $\dfrac{a \cdot x}{x+6} + \dfrac{b}{x-4} = \dfrac{5x^2 - 17x + 18}{x^2 + 2x - 24}$.

3. Given that $\dfrac{a}{x^2 + x - 6} + \dfrac{b}{2x^2 + x - 10} = \dfrac{12x + 31}{2x^3 + 7x^2 - 7x - 30}$.

   a. Confirm that the least common denominator of the left side is the same as the denominator on the right side. Show all work!

   b. Find the values of a and b that make the equation true.