Add and Subtract Rational Expressions with Unlike Denominators

1. Find the least common denominator of the fractions.

a. $\frac{3a}{5}$, $\frac{a}{4}$ **b.** $\frac{x}{4}$, $\frac{2}{x+1}$ **c.** $\frac{1}{2y^2}$, $\frac{5}{y^5}$ **d.** $\frac{8a}{a^2-1}$, $\frac{1}{2a+2}$

2. Make the fractions equivalent.

a. $\frac{2x}{x+1} = \frac{\quad}{x^2(x+1)}$ **b.** $\frac{t+1}{t-2} = \frac{\quad}{t^2-4}$ **c.** $\frac{x}{x^2+3} = \frac{x^2-x}{\quad}$

3. Add the fractions in problem (1).

4. Simplify.

a. $\frac{3}{x} + \frac{1}{5x}$ **b.** $\frac{2}{a} - \frac{4}{b}$ **c.** $\frac{2y}{x^2} + \frac{x+3}{5}$

d. $3 + \frac{1}{x}$ **e.** $\frac{12}{w^2} + 4w$ **f.** $\frac{2}{ab^2} - \frac{4}{ab^3c}$

5. Simplify.

a. $\frac{4}{x^2-2x} + \frac{5x}{2-x}$ **b.** $\frac{b^2}{(b-1)} - 7$

c. $\frac{5+x}{x} + \frac{x^2}{x-2}$ **d.** $\frac{2}{(x-1)^2} + \frac{x}{x-1}$

e. $\frac{1}{q} + \frac{1+q}{s} - \frac{q-1}{q}$ **f.** $2y + 3 - \frac{1}{1-x^2}$