

## Seventeenth Set of Homework

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Due: Tuesday March 29

**Please note:** You should fully justify your answers.

### Addition and subtraction of rational expressions

1. Perform the following operations and simplify your answers as much as possible:

$$\text{A. } \frac{3x+5}{x+1} + \frac{2x-5}{x+1} \quad \text{B. } \frac{3x}{x+2} + \frac{6}{x+2} \quad \text{C. } \frac{x^2}{3x-12} - \frac{16}{3x-12} \quad \text{D. } \frac{3a+1}{2a-6} + \frac{a+2}{3-a}$$

$$\text{E. } \frac{4}{x} + \frac{4}{y} \quad \text{F. } 2 + \frac{3b}{2b-1} \quad \text{G. } \frac{2x^2+3x-9}{x+3} - x \quad \text{H. } \frac{3x-1}{x-2} + \frac{3x}{2-x} \quad \text{I. } \frac{5}{x} - \frac{5x-1}{x^2}$$

$$\text{J. } \frac{3x}{5} - \frac{5}{3x} \quad \text{K. } \frac{10x^2-x+11}{x^2-81} - \frac{9x^2-x+20}{x^2-81} \quad \text{L. } \frac{5}{3x-3} - \frac{2}{x-1} \quad \text{M. } \frac{3x+7}{x^2-x-12} + \frac{4x+3}{12+x-x^2}$$

$$\text{N. } \frac{4}{x-2} + \frac{8}{x^2-4x+4} \quad \text{O. } \frac{a-7}{a^2-4} - \frac{a}{a^2+3a+2} \quad \text{P. } \frac{3x}{x^2+x-6} + \frac{2}{2x^2+7x+3}$$

$$\text{Q. } \frac{1}{x-2} - \frac{2x+8}{x^3-8} \quad \text{R. } \frac{1}{x+1} - \frac{1}{x} + \frac{2}{x^2} \quad \text{S. } t - \frac{5}{2t-1} + 2 \quad \text{T. } \frac{5z-12}{z^2-8z+15} - \frac{3z-2}{z-3} + \frac{3}{z-5}$$

$$\text{U. } \frac{2}{y^2-9} - \frac{3}{y^2-4y+3} + \frac{y-1}{y^2+2y-3} \quad \text{V. } -\frac{2x}{x^2-4} + \frac{3}{x-2} + \frac{2x+1}{x+2} \quad \text{W. } \left(\frac{b}{2a}\right)^2 - \frac{c}{a}$$