Name: _____

MATH 100
Fall 2021
HW 13: Due 11/15

"If at first you don't succeed, find out if the loser gets anything."
– William Lyon Phelps

Problem 1. (10pt) Compute the following, being sure to show all your work and simplifying as much as possible:

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

Problem 2. (10pt) Compute the following, being sure to show all your work and simplifying as much as possible:

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

Problem 3. (10pt) Compute the following, being sure to show all your work and simplifying as much as possible:

$$\frac{x}{x-5} + \frac{x+1}{x+2}$$

Problem 4. (10pt) Compute the following, being sure to show all your work and simplifying as much as possible:

$$\frac{x-2}{x^2+10x+16} - \frac{x}{x^2+7x-8}$$

Problem 5. (10pt) Compute the following, being sure to show all your work and simplifying as much as possible:

$$\frac{8}{x+1} \cdot \frac{x^2-1}{4x+4}$$

Problem 6. (10pt) Compute the following, being sure to show all your work and simplifying as much as possible:

$$\frac{x+6}{x^2-2x-24} \cdot \frac{x^2+5x+4}{2x+12}$$

Problem 7. (10pt) Compute the following, being sure to show all your work and simplifying as much as possible:

$$\frac{\frac{x+1}{x}}{\frac{x^2-1}{x^2+9x}}$$

Problem 8. (10pt) Compute the following, being sure to show all your work and simplifying as much as possible:

$$\frac{\dfrac{x^2+x-2}{x^2+8x+15}}{\dfrac{x^2-2x-8}{x^2-9}}$$