

Nineteenth Set of Homework

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Due: Thursday March 31

Please note: You should fully justify your answers.

Complex Fractions

1. Evaluate each expression:

$$\text{A. } 1 + \frac{1}{2} \quad \text{B. } 1 + \frac{1}{1 + \frac{1}{2}} \quad \text{C. } 1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{2}}} \quad \text{D. } 1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{x}}}$$

2. Simplify each of the following as much as possible:

$$\text{A. } \frac{\frac{1}{a}}{1 - \frac{1}{a}} \quad \text{B. } \frac{2 - \frac{3}{a}}{2 + \frac{3}{a}} \quad \text{C. } \frac{\frac{x}{y} - 3}{\frac{x^2}{y^2} - 9} \quad \text{D. } \frac{1 + \frac{1}{a+3}}{1 + \frac{7}{a-3}} \quad \text{E. } \frac{\frac{1}{x+h} - \frac{1}{h}}$$

$$\text{F. } \frac{\frac{2}{3} - 1}{\frac{x}{3} + 2} \quad \text{G. } \frac{\frac{1}{a-b} + \frac{1}{a+b}}{a^2 - b^2} \quad \text{H. } \frac{\frac{1}{x} - \frac{1}{y}}{\frac{1}{x} + \frac{1}{y}} \quad \text{I. } \frac{\frac{1}{x+2} - \frac{1}{x+3}}{x^2 + 5x + 6} \quad \text{J. } \frac{\frac{3}{2x+1} - \frac{x}{x+2}}{2x^2 - 2x - 6}$$

$$\text{K. } \frac{\frac{2}{x-2} + 3}{1 - \frac{3}{x+1}} \quad \text{L. } \frac{1 + \frac{2}{x} + \frac{1}{x^2}}{1 + \frac{1}{x}} \quad \text{M. } \frac{1 - \frac{3}{x} - \frac{10}{x^2}}{\frac{5}{x} - 1} \quad \text{N. } \frac{\frac{z+3}{z-3} + \frac{z-3}{z+3}}{\frac{z+3}{z-3} - \frac{z-3}{z+3}}$$