Perform each of the following operations and simplify your result.

Section 6.2

1. $\dfrac{3}{x^2 - 2x - 24} + \dfrac{x + 2}{x^2 - 16}$

Section 6.3

2. $\dfrac{\dfrac{1}{x-5} - \dfrac{1}{x}}{5}$

Section 6.1

3. $\left[\dfrac{x+3}{3x+5} + \dfrac{1}{x+3}\right] \div \left[1 + \dfrac{4}{x+3}\right]$