

# Section P7

(56) 
$$\frac{x}{x^2-x-6} - \frac{1}{x+2} - \frac{2}{x-3} = \frac{x}{(x+2)(x-3)} - \frac{1}{x+2} - \frac{2}{x-3} =$$
$$\frac{x}{(x+2)(x-3)} - \frac{1}{(x+2)} \frac{x-3}{x-3} - \frac{2}{x-3} \frac{x+2}{x+2} = \frac{x}{(x+2)(x-3)} - \frac{x-3}{(x+2)(x-3)} - \frac{2(x+2)}{(x+2)(x-3)} =$$
$$\frac{x - (x-3) - 2(x+2)}{(x+2)(x-3)} = \frac{x - x + 3 - 2x - 4}{(x+2)(x-3)} = \boxed{\frac{-2x-1}{(x+2)(x-3)} = -\frac{2x+1}{(x+2)(x-3)}}$$

(64) 
$$\frac{\frac{x-3}{x-4} - \frac{x+2}{x+1}}{x+3} = \frac{\frac{x-3}{x-4} \frac{x+1}{x+1} - \frac{x+2}{x+1} \frac{x-4}{x-4}}{\frac{x+3}{1}} = \frac{\frac{(x-3)(x+1)}{(x-4)(x+1)} - \frac{(x+2)(x-4)}{(x+1)(x-4)}}{\frac{x+3}{1}} =$$
$$\frac{\frac{(x-3)(x+1) - (x+2)(x-4)}{(x-4)(x+1)}}{\frac{x+3}{1}} = \frac{\frac{x^2-2x-3 - (x^2-2x-8)}{(x-4)(x+1)}}{\frac{x+3}{1}} = \frac{\frac{5}{(x-4)(x+1)}}{\frac{x+3}{1}} =$$
$$\frac{5}{(x-4)(x+1)} \frac{1}{x+3} = \boxed{\frac{5}{(x-4)(x+1)(x+3)}}$$