

教科書19ページ 練習15

$$\begin{aligned}
 (1) \frac{1}{x+2} + \frac{1}{x-1} &= \frac{1 \cdot (x-1)}{(x+2)(x-1)} + \frac{x(x+2)}{(x+2)(x-1)} \\
 &= \frac{x-1+x(x+2)}{(x+2)(x-1)} = \frac{x-1+x^2+2x}{(x+2)(x-1)} \\
 &= \frac{x^2+3x-1}{(x+2)(x-1)} \quad (\text{答}) \quad \leftarrow \text{分子の } x^2+3x-1 \text{ はこれ以上因数分解できない}
 \end{aligned}$$

$$\begin{aligned}
 (2) \frac{x+1}{x-2} - \frac{x-1}{x+2} &= \frac{(x+1)(x+2)}{(x-2)(x+2)} - \frac{(x-2)(x-1)}{(x-2)(x+2)} \\
 &= \frac{x^2+3x+2}{(x-2)(x+2)} - \frac{x^2-3x+2}{(x-2)(x+2)} \\
 &= \frac{x^2+3x+2-(x^2-3x+2)}{(x-2)(x+2)} = \frac{x^2+3x+2-x^2+3x-2}{(x-2)(x+2)} \\
 &= \frac{6x}{(x-2)(x+2)} \quad (\text{答})
 \end{aligned}$$

練習16

$$\begin{aligned}
 (1) \frac{1}{x^2+x} + \frac{1}{x^2+3x+2} &= \frac{1}{x(x+1)} + \frac{1}{(x+1)(x+2)} \\
 &= \frac{x+2}{x(x+1)(x+2)} + \frac{x}{x(x+1)(x+2)} \\
 &= \frac{x+2+x}{x(x+1)(x+2)} = \frac{2x+2}{x(x+1)(x+2)} = \frac{2(x+1)}{x(x+1)(x+2)} \\
 &= \frac{2}{x(x+2)} \quad (\text{答})
 \end{aligned}$$

$$\begin{aligned}
 (2) \frac{x+4}{x^2-2x} - \frac{3}{x^2-3x+2} &= \frac{x+4}{x(x-2)} - \frac{3}{(x-1)(x-2)} \\
 &= \frac{(x+4)(x-1)}{x(x-1)(x-2)} - \frac{3(x-1)}{x(x-1)(x-2)} \\
 &= \frac{x^2+3x-4}{x(x-1)(x-2)} - \frac{3x-3}{x(x-1)(x-2)} = \frac{x^2+3x-4-3x+3}{x(x-1)(x-2)} \\
 &= \frac{x^2-4}{x(x-1)(x-2)} = \frac{(x-2)(x+2)}{x(x-1)(x-2)} \\
 &= \frac{x+2}{x(x-1)} \quad (\text{答})
 \end{aligned}$$