

$$\textcircled{1} \int \frac{x^3 + x + 1}{x^2 + 2x + 5} dx$$

$$\begin{array}{r} \underline{x-2} \overline{) \quad x^3 + x + 1} \\ \underline{x^3 - 2x^2} \phantom{+ 1} \\ 2x^2 + x + 1 \\ \underline{2x^2 - 4x} \phantom{+ 1} \\ 5x + 1 \\ \underline{5x - 10} \\ 11 \end{array}$$

$$\int x^2 + 2x + 5 + \frac{11}{x-2} dx$$

$$\frac{1}{3}x^3 + x^2 + 5x + 11 \ln|x-2| + C$$