

Oef 1.52)

$$\int \frac{x^2 - 3x - 8}{x^2 - 2x + 1} dx$$

Step 1  $\text{gr}^{\text{T}} \geq \text{gr}^{\text{N}}?$  JA

$$\begin{array}{r|l} x^2 - 3x - 8 & x^2 - 2x + 1 \\ - (x^2 - 2x + 1) & 1 \\ \hline & -x - 9 \end{array}$$

$$= \int \left( 1 - \frac{x+9}{x^2-2x+1} \right) dx$$

$$= x - \int \frac{x+9}{x^2-2x+1} dx$$

Step 2

$$1) N = x^2 - 2x + 1 = (x-1)^2$$

$$\begin{aligned} \frac{x+9}{x^2-2x+1} &= \frac{A}{x-1} + \frac{B}{(x-1)^2} \\ &= \frac{A(x-1) + B}{(x-1)^2} \end{aligned}$$

$$\begin{cases} A = 1 \\ -A + B = 9 \end{cases} \Leftrightarrow \begin{cases} A = 1 \\ B = 10 \end{cases}$$

$$= x - \int \frac{1}{x-1} dx - \int \frac{10}{(x-1)^2} dx$$

$$= x - \ln|x-1| + 10 \frac{1}{x-1} + C$$