

$$\begin{aligned} \int \frac{dx}{x^2-5x+6} &= \int \frac{dx}{(x+1)(x-6)} = \int \left[\frac{A}{x-2} + \frac{B}{x-3} \right] dx = \int \frac{[A(x-3) + B(x-2)]}{(x-2)(x-3)} dx = \\ &= \int \frac{[x(A+B) - A3 - B2]}{(x-2)(x-3)} dx = \int \left[-\frac{1}{x-2} + \frac{1}{x-3} \right] dx = \int \left[-\frac{1}{x-2} + \frac{1}{x-3} \right] dx = -\ln|x-2| + \ln|x-3| + C = \\ &= \ln \left| \frac{x-3}{x-2} \right| + C \end{aligned}$$

$$x^2-5x+6=0$$

$$x=2;3$$

$$\frac{A}{x-2} + \frac{B}{x-3} = \frac{A(x-3) + B(x-2)}{(x-2)(x-3)} = \frac{x(A+B) - A3 - B2}{(x-2)(x-3)}$$

$$x(A+B) - 3A - 2B = 1$$

$$\begin{cases} A+B=0 \\ -3A-2B=1 \end{cases}$$

$$\begin{cases} A+B=0 \\ -3A-2B=1 \end{cases}$$

$$\begin{cases} A=-B \\ 3A-2A=-1 \end{cases}$$

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$$\begin{cases} B=1 \\ A=-1 \end{cases}$$

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