

$$\int \frac{\dots}{(x+1)(x-1)^3(x^2+x-6)^2x^3} dx$$

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$$= \int \frac{\dots}{(x+1)(x-1)^3(x-2)^2(x+3)^2x^3} dx$$

$$= \int \frac{A}{x+1} + \frac{B_1}{x-1} + \frac{B_2}{(x-1)^2} + \frac{B_3}{(x-1)^3} + \frac{C_1}{x-2} + \frac{C_2}{(x-2)^2} + \frac{D_1}{x+3} + \frac{D_2}{(x+3)^2} + \frac{E_1}{x} + \frac{E_2}{x^2} + \frac{E_3}{x^3} dx$$

$$= A \ln|x+1| + B_1 \ln|x-1| + \tilde{B}_2(x-1)^{-1} + \tilde{B}_3(x-1)^{-2} + C_1 \ln|x-2| + \tilde{C}_2(x-2)^{-1} + D_1 \ln|x+3| + \tilde{D}_2(x+3)^{-1} + E_1 \ln|x| + \tilde{E}_2x^{-1} + \tilde{E}_3x^{-2} + konst.$$