$P(x)$

$Q($

x^2+2x

$2A + B + C$

$3A + 2B\text{-}C = 2$

$\text{-}2A = -1$

$4x$

(

$4x$

$(x\text{-}1)^2($

$\frac{1}{x\text{-}1} +$

$$\frac{1}{x} - \frac{1}{(x^2+1)} + \frac{2}{(x^2+1)^2}$$