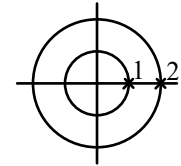


Find the Laurent's series of $f(z) = \frac{1}{z^2 - 3z + 2}$ in case of $1 < |z| < 2$. [106 文化機械 5]

$$[\text{解}] f(z) = \frac{1}{(z-1)(z-2)} = \frac{1}{z-2} - \frac{1}{z-1} = \frac{\frac{1}{2}}{\frac{z}{2}-1} - \frac{\frac{1}{z}}{1-\frac{1}{z}} = -\frac{\frac{1}{2}}{1-\frac{z}{2}} - \frac{\frac{1}{z}}{1-\frac{1}{z}}$$



$$= -\frac{1}{2} \left[1 + \frac{z}{2} + \left(\frac{z}{2}\right)^2 + \dots \right] - \frac{1}{z} \left[1 + \frac{1}{z} + \left(\frac{1}{z}\right)^2 + \dots \right]$$

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