

Use a Laurent series to find the indicated residue. $f(z) = \frac{e^{-z}}{(z-2)^2}$; $\text{Res}(f(z), 2)$ [95 中央機械能源
10(a)]

$$[\text{解}] \text{Res}(f(z), 2) = \frac{1}{1!} \frac{d}{dz} \left[(z-2)^2 \cdot \frac{e^{-z}}{(z-2)^2} \right] \Bigg|_{z=2} = \frac{d}{dz} [e^{-z}] \Bigg|_{z=2} = -e^{-z} \Bigg|_{z=2} = -e^{-2}$$



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