initial deposit dollars $25,000$/ capital after 4 years dollars $50,000$

$$\Longrightarrow \text{ annual interest rate } r = \frac{\ln 2}{4}$$

$$P(t) = 25,000\, e^{rt}$$

$$P(4) = 25,000\, e^{4r} = 50,000$$

$$e^{4r} = 2 \Longrightarrow 4r = \ln 2$$