

$$26) F = P e^{rt}$$

$$r = 10\% = .10$$

$$P = 100 \quad F = 1000$$

$$1000 = 100 e^{.1t} \quad \text{solve for } t$$

$$10 = e^{(.1)t}$$

$$\ln 10 = \ln[e^{(.1)t}]$$

$$\ln 10 = (.1)t$$

$$t = \frac{\ln(10)}{.1} = \frac{\ln 10}{\left(\frac{1}{10}\right)}$$

$$t = 10 \ln 10 \text{ years (exact answer)}$$

$$t \approx 23.0259 \text{ years}$$

to 4 decimal places