6. Compounded Continuously

$$F = P \cdot e^{rt}$$

$$1{,}000{,}000 = 1{,}000\, e^{(.10)t}$$

$$1000 = e^{(.1)t}$$

$$\ln 1000 = \ln e^{(.1)t}$$

$$3 \ln 10 = (.1)t$$

$$t = \frac{3\ln(10)}{.1} = \frac{3\ln(10)}{\frac{1}{10}} = 30 \ln 10$$

$t = 30 \ln 10$ years.
$= 69.08$ years