

Examen final

$$F(0) = 2500 e^{k \cdot t}$$

$$F(90)_{mi} = 2500 e^{k \cdot t}$$

$$7500 = 2500 e^{k \cdot t}$$

$$7500 = 2500 e^{k(90)}$$

$$f(t) = 2500 e$$

$$\frac{7500}{2500} = \frac{2500}{2500}$$

$$3 = e^{k(90)}$$

$$\ln 3 = k(90)$$

$$\frac{\ln 3}{90} = k$$

$$k = \frac{\ln 3}{90} = 0.012 \quad A)$$

$$F(t) = 2500 e^{0.012 \cdot t}$$

$$+ (240)$$

$$2500 e^{0.012(240)}$$

$$+ (240) = 2500 e^{2.88}$$

$$+ (240) = 10.41 \times 2500 = 26,041 \quad B)$$

$$F(t) = 2500 e^{kt}$$

$$10000 = 2500 e^{0.012(t)}$$

$$\frac{10000}{2500} = e^{0.012(t)}$$

$$4 = e^{0.012(t)}$$

$$\ln 4 = \ln e^{0.012(t)}$$

$$\ln 4 = 0.012(t)$$

$$\ln 4 = \frac{1.38}{0.012} = 115.5 \text{ min}$$

$$\boxed{115.5 \text{ min}} \text{ (c)}$$