

(14)

$$t = 2h \rightarrow 400$$

$$t = 6h \rightarrow 25,600$$

$$P = Ce^{kt}$$

$$400 = Ce^{k(2)}$$

$$25,600 = Ce^{k(6)}$$

$$\ln 400 = \ln Ce^{2k}$$

$$400 = Ce^{2k}$$

$$\ln 400 = \ln Ce^{6k}$$

$$k = \frac{\ln 64}{4}$$

$$\rightarrow 103.97\%$$

$$\frac{400}{e^{\ln(0.4)t}} = C$$

(b)

$$C = 50 //$$

$$(c) \quad h(t) = 50 e^{(\ln(0.4)/u)t}$$

$$(d) \quad \ln(4.5) = \frac{5.3821}{(\ln(0.4)/u)t}$$

$$(e) \quad 50,000 = 50 e^{\ln(0.4)t/u}$$

$$\ln 1000 = \frac{\ln(0.4)t}{u}$$

$$\ln 1000 = \frac{(\ln(0.4)t)}{u}$$

$$\frac{u \ln 1000}{\ln(0.4)} = t$$

$$\ln(0.4) = -0.91629$$

$$\frac{6.6438 u}{-0.91629} = t$$

(10)  $P = 5700$  millones 1995

$$K = 2\% \rightarrow K = 0.02$$

$$P = Ce^{Kt}$$

$$5700 = Ce^{0.02t}$$

$$5700 = C$$

$$2(5700) = 5700 e^{0.02t}$$

$$2 = e^{0.02t} \rightarrow \ln 2 = 0.02t$$

$$\frac{\ln 2}{0.02} = t$$

$$34.65 = t$$

$$35 = t$$

(a) se duplica en 2030

$$\frac{\ln 3}{0.02} = t$$

$$54.93 = t \rightarrow 55 = t$$

se triplica en 2050