

$$8a. N = N_0 e^{kt}$$

~~$$5000 = 18 e^{k \cdot 70}$$~~

~~$$5000 = 18 e^{70k}$$~~

~~$$277\frac{7}{9} = e^{70k}$$~~

~~$$\ln 277\frac{7}{9} = 70k$$~~

~~$$k = \frac{\ln 277\frac{7}{9}}{70}$$
  
$$= 0.080383163$$~~

when  $t=0$

$$18 = N_0 e^{k \cdot 0}$$

$$18 = N_0 e$$

$$\ln 18 = N_0$$

$$N_0 = 2.890371758$$

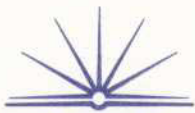
$$5000 = 2.890371758 e^{70k}$$

$$1729.881281 = e^{70k}$$

$$\ln 1729.881281 = 70k$$

$$k = \frac{\ln 1729.881281}{70}$$

$$= 0.106511543$$



when  $t = 78$

$$N = 2.890371758 e^{78k}$$

$$= 2.890371758 e^{8.307900354}$$

$$N = 11722.73601$$

$$N \doteq 11723 \text{ koodas}$$

b.i.  $P(A) = \frac{1}{5}$

ii.  $P(A, B, C, D, E) = \frac{1}{25}$

c.