

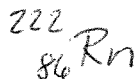
a) $m_0 = 15 \times 10^{-17} \text{ kg}$

m after one $\frac{1}{2}$ life is $\frac{1}{2} \cdot (15 \times 10^{-17} \text{ kg})$
 $= 7.5 \times 10^{-17} \text{ kg}$

By the graph: $m = 7.5 \times 10^{-17} \text{ kg}$ after ≈ 4 days

$$t_{1/2} \approx 4 \text{ days}$$

b) From App. B, closest value for $t_{1/2} = 3.823 \text{ days}$



c) $t_{1/2} = 3.823 \text{ days}$
 $R_0 = 840 \text{ counts/sec}$

$$t = \frac{11.5 \text{ days}}{3.823 \text{ days}} = 3 \text{ half-lives}$$

$$R = 840 \text{ counts/sec} \cdot \left(\frac{1}{2}\right)^3$$

$$R = 105 \text{ counts/sec}$$