67. (a) Our lab-based measurement of its lifetime is figured simply from $t = L/v = 7.99 \times 10^{-13}$ s. Use of the time-dilation relation (Eq. 38-7) leads to

$$\Delta t_0 = \left(7.99 \times 10^{-13}\,\text{s}\right)\sqrt{1-(0.960)^2} = 2.24 \times 10^{-13}\,\text{s}\ .$$

(b) The length contraction formula can be used, or we can use the simple speed-distance relation (from the point of view of the particle, who watches the lab and all its meter sticks rushing past him at $0.960c$ until he expires): $L = v\Delta t_0 = 6.44 \times 10^{-5}$ m.