

Serway/Moses/Moyer *Modern Physics, 3rd edition*
Chapter 16 Answers to Odd-Numbered Problems

3. (a) 7.2×10^9 lightyears, (b) ≈ 13 billion years
5. Size: $1/6$ the present linear size; Age: approximately 7% of the present age.
7. (a) $0.383c$ (b) 5.0×10^9 ly
9. $T = 2.52 \times 10^3$ K
11. 6.00
13. (b) 13.0 billion years
15. (a) $T_{\text{av}} = \frac{Gm_s m}{5r_s k_B}$, (b) $T_{\text{av}} \approx 3 \times 10^6$ K