

24. Referring to the solution of problem 19 part (b), we see that  $r = \sqrt{2mK}/qB$  implies the proportionality:  
 $r \propto \sqrt{mK}/qB$ . Thus,

$$\begin{aligned} r_\alpha &= \sqrt{\frac{m_\alpha K_\alpha}{m_p K_p}} \frac{q_p}{q_\alpha} r_p = \sqrt{\frac{4.0 \text{ u}}{1.0 \text{ u}}} \frac{e r_p}{2e} = r_p ; \\ r_d &= \sqrt{\frac{m_d K_d}{m_p K_p}} \frac{q_p}{q_d} r_d = \sqrt{\frac{2.0 \text{ u}}{1.0 \text{ u}}} \frac{e r_d}{e} = \sqrt{2} r_p . \end{aligned}$$