10. (a) In SI units, $K = (2200\,\text{MeV})(1.6 \times 10^{-13}\,\text{J/MeV}) = 3.52 \times 10^{-10}\,\text{J}$. Similarly, $mc^2 = 2.85 \times 10^{-10}\,\text{J}$ for the positive tau. Eq. 38-51 leads to the relativistic momentum:

$$p = \frac{1}{c}\sqrt{K^2 + 2Kmc^2} = \frac{1}{2.998 \times 10^8}\sqrt{\left(3.52 \times 10^{-10}\right)^2 + 2\left(3.52 \times 10^{-10}\right)\left(2.85 \times 10^{-10}\right)}$$

which yields $p = 1.90 \times 10^{-18}\,\text{kg}\cdot\text{m/s}$.

(b) According to problem 46 in Chapter 38, the radius should be calculated with the relativistic momentum:

$$r = \frac{\gamma m v}{|q|B} = \frac{p}{eB}$$

where we use the fact that the positive tau has charge $e = 1.6 \times 10^{-19}\,\text{C}$. With $B = 1.20\,\text{T}$, this yields $r = 9.9\,\text{m}$.