

The following table lists diffraction angles for the first three peaks (first-order) of the x-ray diffraction pattern for some metal. Monochromatic x-radiation having a wavelength of 0.0711 nm was used.

(a) Determine whether this metal's crystal structure is FCC, BCC or neither FCC or BCC and explain the reason for your choice. (*15 points*)

(b) If the crystal structure is either BCC or FCC calculate the atomic radius. (*5 points*)

Peak Number	Diffraction Angle (2θ)
1	18.27°
2	25.96°
3	31.92°