

Below are listed 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 0.1254 nm was used.

(a) Determine whether this metal's crystal structure is FCC, BCC, or neither FCC or BCC.

(b) If the crystal structure is either BCC or FCC, identify which of the metals in [Table Atomic Radii and Crystal Structures for 16 Metals](#) gives this diffraction pattern.

<i>Peak Number</i>	<i>Diffraction Angle (2θ)</i>
------------------------	---

1	31.2°
---	-------

2	44.6°
---	-------

3	55.4°
---	-------

(a)

(b)