

2b) COPPER, 4 ATOMS PER UNIT CELL = FACE CENTRED

$$a = \cancel{2\sqrt{2}R} \quad 2\sqrt{2}R$$

$$\therefore \left(\frac{a}{2}\right)^2 = 2R$$

$$\therefore \frac{\left(\frac{a}{2}\right)^2}{2} = R$$

$$a = 0.362 \text{ nm} = 3.62 \times 10^{-10} \text{ m}$$

$$\therefore \frac{\left(\frac{3.62 \times 10^{-10}}{2}\right)^2}{2} = R$$

$$\therefore R = 1.638 \times 10^{-20} \text{ m}$$