_____

Important: Mark the right answer with a X. The correct answers will mark + 1 points while the incorrect answers will mark as -0.33 points. Non answered questions will not mark nor positively nor negatively. The resulting mark will not be smaller than 0 in any case. There is only one correct answer per question. Good luck!

A metal with a FCC structure has a lattice parameter of 4.08 Å and density of ρ = 19.3 g/cm^3. Calculate the atomic weight of the metal (N_A = 6.023 x 10 ^{23} atoms/mol).	
X	**197.4 g/mol**
	394.7 g/mol
	56.4 g/mol
	2×10^{23} g/mol

The atomic radius of an atom that is present in a BCC unit cell having a lattice parameter of 2.87 Å is:	
	2.48 Å
	1.01 Å
	1.43 Å
X	**1.24 Å**

For a screw dislocation	
	The burgers vector is perpendicular to the dislocation line and parallel to the direction of dislocation movement.
	An extra half-plane of atoms is introduced in the lattice.
X	**The burgers vector is parallel to the dislocation line and perpendicular to the direction of dislocation movement.**
	The movement occurs easier in non closed-packed directions.

Diffusion occurs faster:	
	In materials with high melting point.
	By vacancy diffusion than by interstitial diffusion.
X	**In the BCC structure rather that in the FCC structure.**
	Along the volume (crystal lattice) than along the grain boundaries.

The Miller Indices for the following plane are:	
	($\bar{3}$ $\bar{1}$ 2)
X	**($\bar{1}$ $\bar{3}$ 2)**
	[$\bar{3}$ $\bar{1}$ 2]
	(1 $\bar{3}$ 2)

Sophia A. Tsipas