

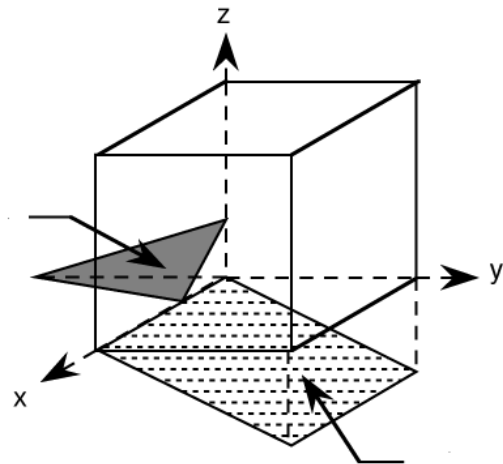
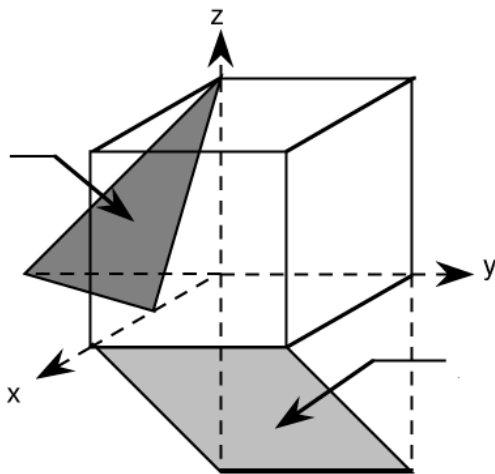
Question 1

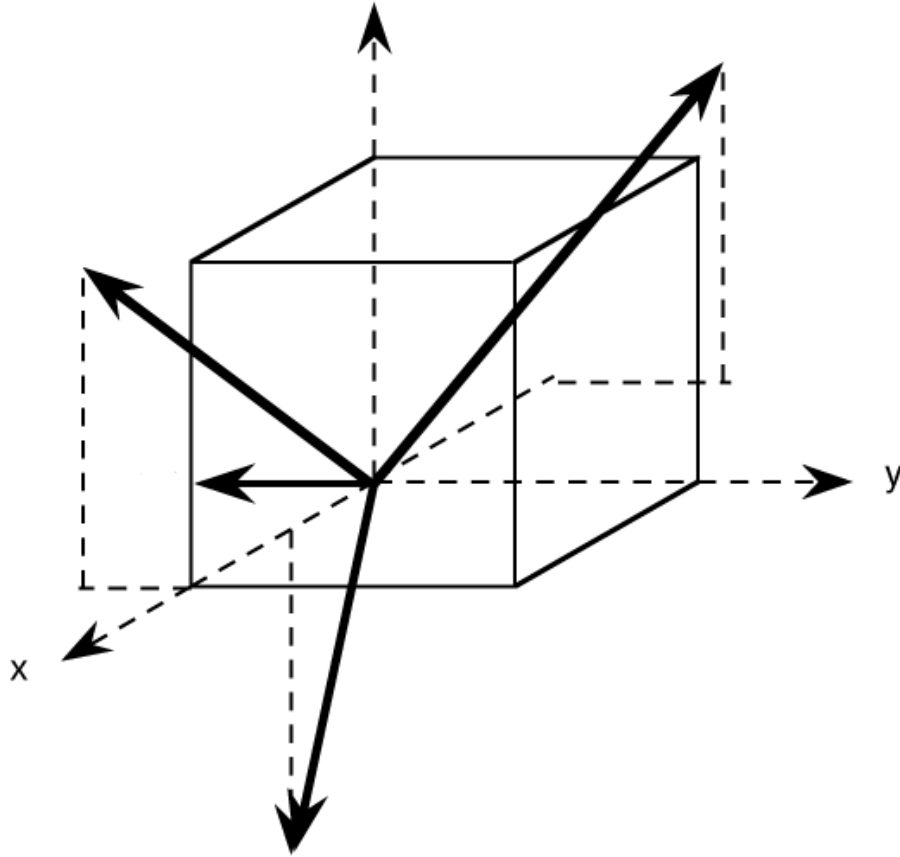
Below are listed the atomic weight, density, and atomic radius for three hypothetical alloys. For each determine whether its crystal structure is FCC, BCC, or simple cubic.

Alloy	Atomic weight (g/mole)	Density (g/cm ³)	Atomic radius (nm)
A	43.1	6.4	0.122
B	184.4	12.3	0.146
C	91.6	9.6	0.137

Question 2

What are the Miller indices for the following directions and planes





Question 3

- a) Derive the planer density of FCC in $(1\ 0\ 0)$ and $(1\ 1\ 1)$ planes
- b) Calculate linear density of iron BCC in $[1\ 1\ 0]$ direction, knowing that atomic radius of iron is $0.124\ \text{nm}$