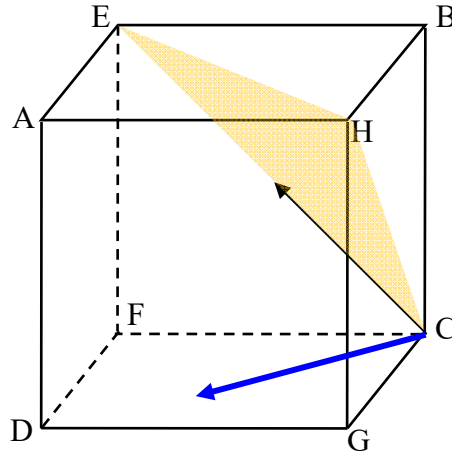
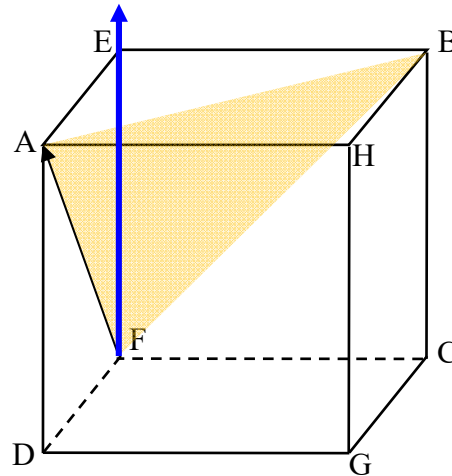


SE104 Homework 9

1. Determine the tensile stress that must be applied along direction CD of a high-purity copper single crystal, which can cause slip on slip plane EHC along slip direction CE. The critical resolved shear stress, τ_y , of the crystal is 0.85 MPa.



2. A tensile stress of 4.75 MPa is applied along direction FE of a FCC copper grain. Calculate the resolved shear stress, τ_r , on the ABF slip plane along slip direction FA.



3. (a) Why is bronze harder than pure copper? (b) When a steel is plastically deformed, it may become stronger. Why? If necessary, do an independent literature research and clearly give the references (Wikipedia is not allowed).

4. What is the major difference between edge dislocation and screw dislocation?