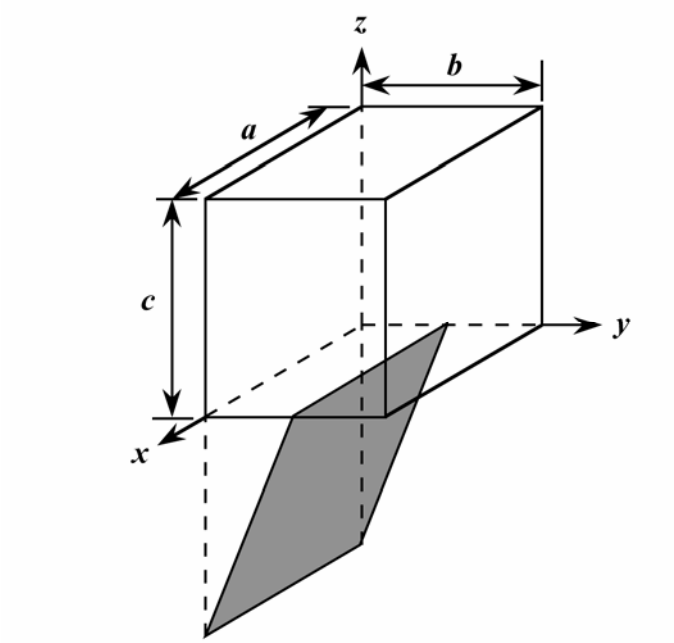
Crystallographic Planes

3.37 (a) We are asked to draw a $(02\bar{1})$ plane within an orthorhombic unit cell. First remove the three indices from the parentheses, and take their reciprocals--i.e., ∞, 1/2, and -1. This means that the plane parallels the *x*-axis, intersects the *y*-axis at *b*/2, and intersects the *z*-axis at -*c*. The plane that satisfies these requirements has been drawn within the orthorhombic unit cell below. (For orthorhombic, $a \neq b \neq c$, and $\alpha = \beta = \gamma = 90°$.)



(b) A (200) plane is drawn within the monoclinic cell shown below. We first remove the parentheses and take the reciprocals of the indices; this gives 1/2, ∞, and ∞,. Thus, the (200) plane parallels both *y*- and *z*-axes, and intercepts the *x*-axis at *a*/2, as indicated in the drawing. (For monoclinic, $a \neq b \neq c$, and $\alpha = \gamma = 90° \neq \beta$.)