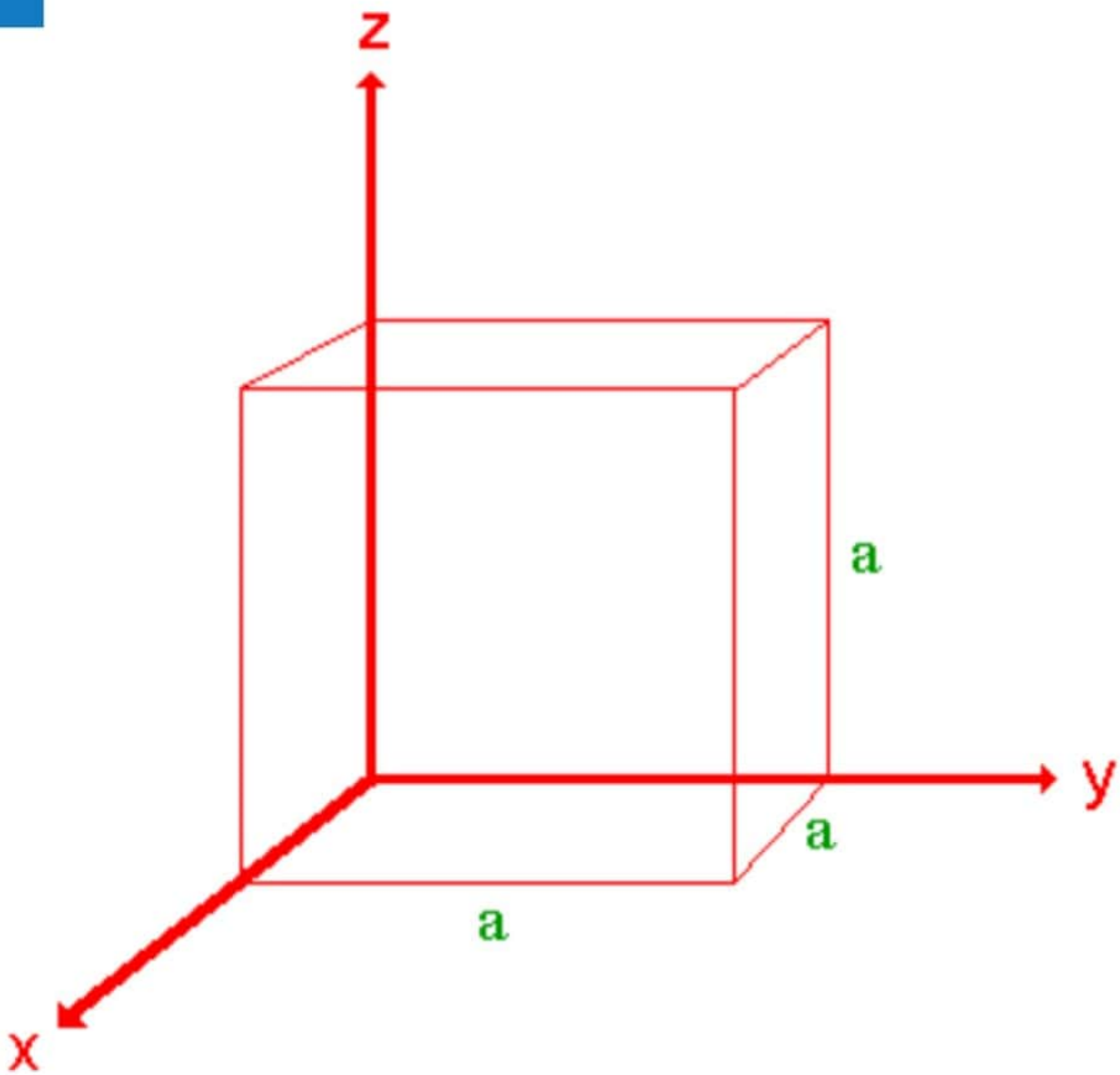
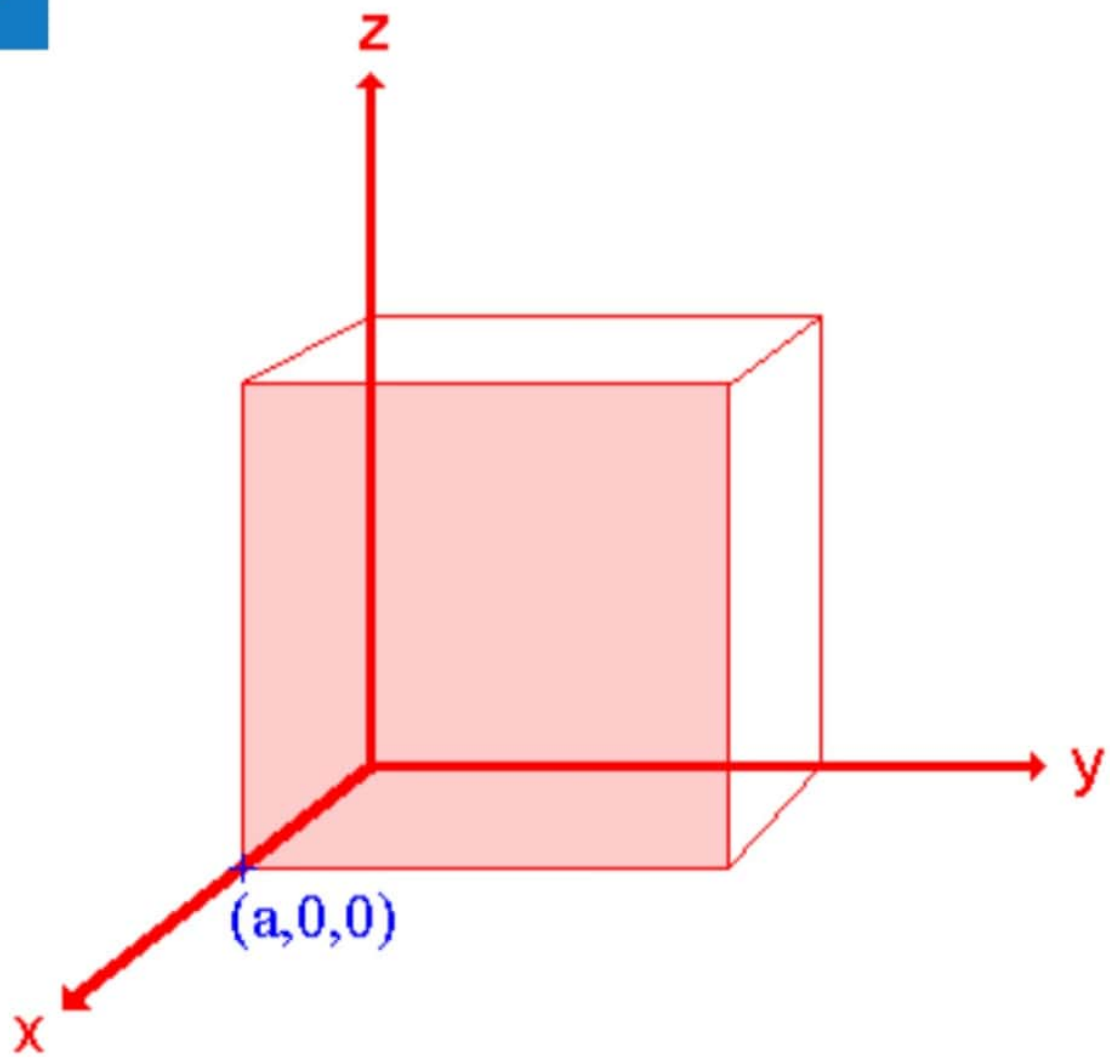


The procedure is most easily illustrated using an example so we will first consider the following surface/plane:



Step 1: *Identify the intercepts on the x- , y- and z-axes.*

In this case the intercept on the x-axis is at $x = a$ (at the point $(a,0,0)$), but the surface is parallel to the *y*- and *z*-axes - strictly therefore there is no intercept on these two axes but we shall consider the intercept to be at infinity (∞) for the special case where the plane is parallel to an axis. The intercepts on the *x*- , *y*- and *z*-axes are thus

Step 2: Specify the intercepts in fractional co-ordinates

Co-ordinates are converted to fractional co-ordinates by dividing by the respective cell-dimension - for example, a point (*x*,*y*,*z*) in a unit cell of dimensions *a* x *b* x *c* has fractional co-ordinates of (*x*/*a* , *y*/*b* , *z*/*c*). In the case of a cubic unit cell each co-ordinate will simply be divided by the cubic cell constant , *a* . This gives

Fractional Intercepts: ***a/a*** **, ∞*/a*, ∞*/a*** i.e. **1 , ∞ , ∞**

Step 3: Take the reciprocals of the fractional intercepts

This final manipulation generates the Miller Indices which (by convention) should then be specified without being separated by any commas or other symbols. The Miller Indices are also enclosed within standard brackets (....) when one is specifying a unique surface such as that being considered here.