Crystallographic Directions

3.27 This problem calls for us to draw a $[2\bar{1}1]$ direction within an orthorhombic unit cell ($a \neq b \neq c$, $\alpha = \beta$ $= \gamma = 90°$). Such a unit cell with its origin positioned at point O is shown below. We first move along the +x-axis 2a units (from point O to point A), then parallel to the +y-axis -b units (from point A to point B). Finally, we proceed parallel to the z-axis c units (from point B to point C). The $[2\bar{1}1]$ direction is the vector from the origin (point O) to point C as shown.