

3.48 This problem asks that we convert (111) and  $(0\bar{1}2)$  planes into the four-index Miller-Bravais scheme,  $(hkil)$ , for hexagonal cells. For (111),  $h = 1$ ,  $k = 1$ , and  $l = 1$ , and, from Equation 3.7, the value of  $i$  is equal to

$$i = -(h + k) = -(1 + 1) = -2$$

Therefore, the (111) plane becomes  $(11\bar{2}1)$ .

Now for the  $(0\bar{1}2)$  plane,  $h = 0$ ,  $k = -1$ , and  $l = 2$ , and computation of  $i$  using Equation 3.7 leads to

$$i = -(h + k) = -[0 + (-1)] = 1$$

such that  $(0\bar{1}2)$  becomes  $(0\bar{1}12)$ .