1.16 For a simple cubic lattice, determine the Miller indices for the planes shown in Figure P1.16.

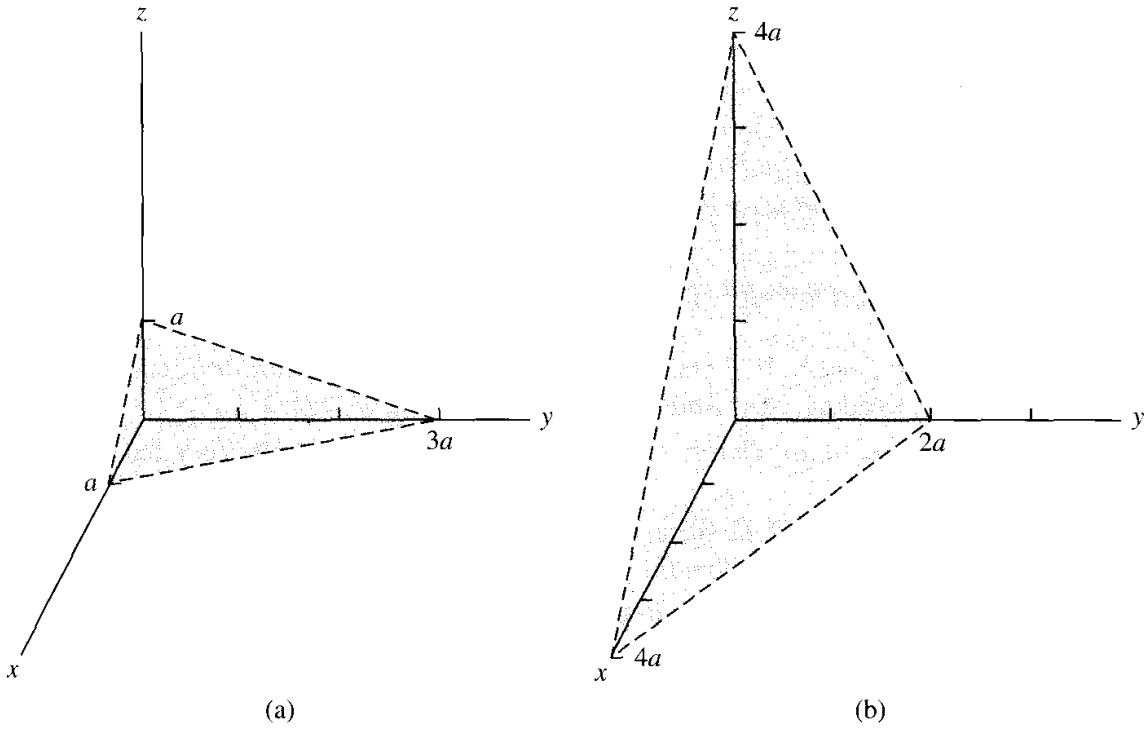

Figure P1.16 | Figure for Problem 1.16.

a)

Form triplet from x-, y-, & z-intercepts $\Rightarrow (a, 3a, a)$

Invert each entry in triplet $\Rightarrow (1/a, 1/3a, 1/a)$

Multiply triplet by (lcd)a $\Rightarrow 3a\,(1/a, 1/3a, 1/a) = (3, 1, 3)$

Drop commas to get Miller indices for a) $\Rightarrow$ **(3 1 3)**

b)

Form triplet from x-, y-, & z-intercepts $\Rightarrow (4a, 2a, 4a)$

Invert each entry in triplet $\Rightarrow (1/4a, 1/2a, 1/4a)$

Multiply triplet by (lcd)a $\Rightarrow 4a\,(1/4a, 1/2a, 1/4a) = (1, 2, 1)$

Drop commas to get Miller indices for b) $\Rightarrow$ **(1 2 1)**