kittel

1.2. $\frac{1}{2}a(\hat{x}+\hat{y}-\hat{z}) = \frac{3}{2}\left[\frac{1}{2}a(\hat{x}+\hat{y})\right]$
$-\frac{1}{2}\left[\frac{1}{2}a(\hat{y}+\hat{z})\right]$
$-\frac{1}{2}\left[\frac{1}{2}a(\hat{z}+\hat{x})\right]$

This gives intercept of $(\frac{3}{2}, -\frac{1}{2}, -\frac{1}{2})$ in fcc rep.

$(\frac{3}{2}, -\frac{1}{2}, -\frac{1}{2}) \xrightarrow{\text{reciprocal}} (\frac{2}{3}, -2, -2) \rightarrow \boxed{1, -3, -3}$

or $[1\bar{3}\bar{3}]$

Similarly, (001) means intersection with the third componat of bcc rep primitive axes as well,

$\frac{1}{2}a(\hat{x}-\hat{y}+\hat{z}) = -\frac{1}{2}\left[\frac{1}{2}a(\hat{x}+\hat{y})\right]$
$+\frac{3}{2}\left[\frac{1}{2}a(\hat{x}+\hat{z})\right]$
$-\frac{1}{2}\left[\frac{1}{2}a(\hat{y}+\hat{z})\right]$.

This gives intercept of $(-\frac{1}{2}, -\frac{1}{2}, \frac{3}{2})$.

$(-2, -2, \frac{2}{3}) \rightarrow \boxed{(-3, -3, 1)}$.

or $\bar{3}\bar{3}1$.