

$\frac{5.1}{(2)}$. From 5.1⁽²⁾, we know that support vectors need to \perp
 $[\phi(x_2) - \phi(x_1)]$

\therefore distance is = distance $b/\omega [\phi(x_2) - \phi(x_1)]$

$$\begin{aligned}\therefore \phi(x_2) - \phi(x_1) &= \sqrt{(1-1)^2 + (2-0)^2 + (2-0)^2} \\ &= 2\sqrt{2}\end{aligned}$$

Now, full margin is $2\sqrt{2}$ & margin is $\sqrt{2}$.