

Find a unit vector perpendicular to the plane $4x + 2y + 4z = -7$. [105 嘉大土木 3]

[解]平面法向量 $\mathbf{n} = 4\mathbf{i} + 2\mathbf{j} + 4\mathbf{k}$

$$\text{單位法向量為 } \pm \frac{\mathbf{n}}{|\mathbf{n}|} = \pm \frac{4\mathbf{i} + 2\mathbf{j} + 4\mathbf{k}}{\sqrt{4^2 + 2^2 + 4^2}} = \pm \frac{2\mathbf{i} + \mathbf{j} + 2\mathbf{k}}{3}$$