Example 13 The angle between the vectors $\hat{i} - \hat{j}$ and $\hat{j} - \hat{k}$ is

(A) $\quad \dfrac{\pi}{3}$
(B) $\quad \dfrac{2\pi}{3}$
(C) $\quad \dfrac{-\pi}{3}$
(D) $\quad \dfrac{5\pi}{6}$

Solution (B) is the correct answer. Apply the formula $\cos\theta = \dfrac{\vec{a}.\vec{b}}{|\vec{a}|.|\vec{b}|}$.

Example 14 The value of λ for which the two vectors $2\hat{i} - \hat{j} + 2\hat{k}$ and $3\hat{i} + \lambda\hat{j} + \hat{k}$ are perpendicular is

(A) $\quad$ 2
(B) $\quad$ 4
(C) $\quad$ 6
(D) $\quad$ 8

Solution (D) is the correct answer.