$$\frac{4}{\sin 45^\circ} = \frac{AB}{\sin(\pi-\alpha)} \Rightarrow \frac{4}{\sin 45^\circ} = \frac{AB}{\sin\alpha} \rightarrow \sin\alpha = \frac{\sin 45^\circ \cdot AB}{4}$$

$$\frac{3}{\sin 30^\circ} = \frac{AC}{\sin\alpha} \qquad \sin\alpha = \frac{\sin 45^\circ \cdot AC}{3} = \frac{\sin 45^\circ \cdot AB}{4} \quad (۲)$$

$$AC = AB \qquad \frac{AB}{AC} = \frac{1}{\frac{\sqrt{2}}{2}} = \frac{2}{\sqrt{2}} = \sqrt{2}$$ ✓

$$A = \frac{\pi}{4} \Rightarrow A\left|\begin{matrix}\frac{1}{2}\\ \frac{\sqrt{2}}{2}\end{matrix}\right. \qquad B = \frac{5\pi}{4} \rightarrow B\left|\begin{matrix}-\frac{\sqrt{2}}{2}\\ -\frac{1}{2}\end{matrix}\right. \qquad C = \frac{3\pi}{2} \rightarrow C\left|\begin{matrix}0\\ -1\end{matrix}\right.$$

$$\frac{1}{2}\left|\begin{matrix}\frac{1}{2} & -\frac{\sqrt{2}}{2} & 0\\ \frac{\sqrt{2}}{2} & \frac{1}{2} & -1\\ 1 & 1 & 1\end{matrix}\right| = \frac{1}{4} + \frac{2}{4} + 0 - 0 + \frac{1}{2} + \frac{2}{4} = \frac{9}{4} \times \frac{1}{2} = \frac{9}{8} \quad (۱)$$

$$AC = \sqrt{\frac{1}{4} + \left(\frac{\sqrt{2}}{2}+1\right)^2} =$$

$$S_{ABC} = \frac{1}{2} AB \cdot AC \cdot \sin 30^\circ = \frac{1}{2} \times \frac{1}{2} \times \log_2^{32} \log_2^{16} = \frac{1}{2} \times \frac{1}{2} \times 3 \times 4 = 3 \quad (۳) \quad (۲)$$ ✓

$m = \cos\alpha$

$$2\cos^4\alpha - \cos^2\alpha - \sin^2\alpha(2\sin^2\alpha - 1)$$

$$2\cos^4\alpha - \cos^2\alpha - \sin^2\alpha(2\sin^2\alpha - 1)$$

$$\cos^2\alpha(2\cos^2\alpha - 1) - \sin^2\alpha(2\sin^2\alpha - 1) = \sin^2 m + \cos^2 m \quad (۱)$$