

14) วิธีทำ จากโจทย์ ขอกำหนดให้ $\tan^2\left(\frac{\pi}{4} - \theta\right) = A$

$$\text{ดังนั้น } \frac{A-1}{A+1} = \frac{3}{5}$$

$$5(A-1) = 3(A+1)$$

$$5A-5 = 3A+3$$

$$5A-3A = 3+5$$

$$2A = 8$$

$$A = 4$$

$$\therefore \tan^2\left(\frac{\pi}{4} - \theta\right) = 4$$

$$\tan\left(\frac{\pi}{4} - \theta\right) = \pm 2$$

$$\text{โจทย์กำหนดให้ } \theta = \left[\frac{-\pi}{4}, \frac{\pi}{4} \right]$$

$$\frac{-\pi}{4} \leq \theta \leq \frac{\pi}{4}$$

นำ -1 คูณตลอด

$$\frac{\pi}{4} \geq -\theta \geq \frac{-\pi}{4}$$

นำ $\frac{\pi}{4}$ บวกตลอด

$$\frac{\pi}{4} + \frac{\pi}{4} \geq -\theta + \frac{\pi}{4} \geq \frac{-\pi}{4} + \frac{\pi}{4}$$

$$\frac{\pi}{2} \geq \frac{\pi}{4} - \theta \geq 0$$

ดังนั้น เป็น Q_1 ค่า \tan เป็นค่า +

$$\therefore \tan\left(\frac{\pi}{4} - \theta\right) = 2$$

$$\text{จาก } \tan\left(\frac{\pi}{4} - \theta\right) = 2 = \frac{\tan \frac{\pi}{4} - \tan \theta}{1 + \tan \frac{\pi}{4} \tan \theta}$$

แทนค่า $\tan \frac{\pi}{4} = 1$ ลงในสมการได้ดังนี้

$$2 = \frac{1 - \tan \theta}{1 + \tan \theta}$$

$$2(1 + \tan \theta) = 1 - \tan \theta$$

$$2 + 2 \tan \theta = 1 - \tan \theta$$

$$2 \tan \theta + \tan \theta = 1 - 2$$

$$3 \tan \theta = -1$$

$$\tan \theta = -\frac{1}{3}$$

$$\text{จาก } \sec^2 \theta = 1 + \tan^2 \theta$$

$$\sec^2 \theta = 1 + \left(-\frac{1}{3}\right)^2$$

$$\sec^2 \theta = 1 + \frac{1}{9}$$

$$\sec^2 \theta = \frac{10}{9}$$

$$\therefore \cos^2 \theta = \frac{1}{\sec^2 \theta} = \frac{9}{10}$$

ตอบ E