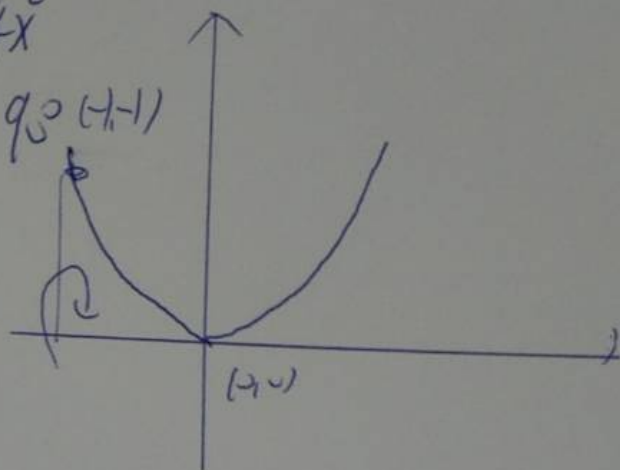


將拋物線  $y=2x^2$

逆時針旋轉  $90^\circ$  (1,-1)

→



$$\begin{pmatrix} \cos 90^\circ & -\sin 90^\circ \\ \sin 90^\circ & \cos 90^\circ \end{pmatrix} \begin{pmatrix} 0 \\ 0 \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \end{pmatrix}$$

$$\begin{pmatrix} \cos 90^\circ & -\sin 90^\circ \\ \sin 90^\circ & \cos 90^\circ \end{pmatrix} \begin{pmatrix} 1 \\ 1 \end{pmatrix} = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$

$$\begin{pmatrix} \cos 90^\circ & -\sin 90^\circ \\ \sin 90^\circ & \cos 90^\circ \end{pmatrix} \begin{pmatrix} \frac{1}{2} \\ \frac{3}{4} \end{pmatrix} = \begin{pmatrix} -\frac{3}{4} \\ \frac{1}{2} \end{pmatrix}$$

$$\hat{=} y = Ax^2 + Bx + C \text{ 過 } (0,0), (1,-1), (\frac{3}{4}, \frac{1}{2})$$

$$\Rightarrow y = \frac{4}{3}x^2 + \frac{1}{3}x$$

$$\pi \int_{-1}^0 \left( \frac{4}{3}x^2 + \frac{1}{3}x \right)^2 dx = \frac{23}{135} \pi$$

想請問為什麼和

$$\pi \int_0^1 (1 - \sqrt{1-y})^2 dy = \frac{\pi}{6}$$

的答案不一樣?