

加法定理 3

$\sin \frac{25}{36}\pi - \sin \frac{23}{36}\pi + \sin \frac{1}{36}\pi$ を計算すると,

$$\sin \frac{25}{36}\pi - \sin \frac{23}{36}\pi + \sin \frac{1}{36}\pi = \sin \left(\frac{2}{3}\pi + \frac{1}{36}\pi \right) - \sin \left(\frac{2}{3}\pi - \frac{1}{36}\pi \right) + \sin \frac{1}{36}\pi$$

$$= \boxed{} \cos \frac{\boxed{}}{\boxed{}}\pi \sin \frac{\boxed{}}{\boxed{}}\pi + \sin \frac{1}{36}\pi = \boxed{}$$

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$$\sin \left(\frac{2}{3}\pi + \frac{1}{36}\pi \right) - \sin \left(\frac{2}{3}\pi - \frac{1}{36}\pi \right) + \sin \frac{1}{36}\pi$$

$$= \sin \frac{2}{3}\pi \cos \frac{1}{36}\pi + \cos \frac{2}{3}\pi \sin \frac{1}{36}\pi$$

$$- \left(\sin \frac{2}{3}\pi \cos \frac{\pi}{36} - \cos \frac{2}{3}\pi \sin \frac{1}{36}\pi \right) + \sin \frac{1}{36}\pi$$

$$= 2 \cos \frac{2}{3}\pi \sin \frac{1}{36}\pi + \sin \frac{1}{36}\pi$$

$$= 2 \times \left(-\frac{1}{2}\right) \sin \frac{1}{36}\pi + \sin \frac{1}{36}\pi$$

$$= -\sin \frac{1}{36}\pi + \sin \frac{1}{36}\pi$$

$$= \underline{\underline{0}}$$

