

## 例題1 解答例

(1) 誘導起電力

$$\begin{aligned} V &= -\frac{d\Phi}{dt} = -\frac{d}{dt}(0.40 \cos 100\pi t) \\ &= -0.40 \frac{d}{dt}(\cos 100\pi t) = -0.40(-\sin 100\pi t)100\pi \\ &= 40\pi \sin 100\pi t \end{aligned}$$

(2) 誘導起電力の最大値

$$V_0 = 40\pi = 126 \text{ V}$$

(3) コイルの回転数

$$f = \frac{1}{T} = \frac{\omega}{2\pi} = \frac{100\pi}{2\pi} = 50 \text{ Hz}$$