

# 加法定理の応用1、2倍角の公式

## 数Ⅱ(加法定理の応用①・2倍角の公式編)

⑩

$$\begin{array}{ll} \sin 2\alpha = \text{①} \underline{\hspace{2cm}} & \tan 2\alpha = \text{③} \underline{\hspace{2cm}} \\ \cos 2\alpha = \text{②} \underline{\hspace{2cm}} = & \underline{\hspace{2cm}} = \end{array}$$

∴  $\frac{\pi}{2} < \alpha < \pi$  で、 $\sin \alpha = \frac{\sqrt{7}}{4}$  のとき、次の値を求めよう。

- ④  $\sin 2\alpha$
- ⑤  $\cos 2\alpha$
- ⑥  $\tan 2\alpha$

## 数Ⅱ(加法定理の応用①・2倍角の公式編)

⑩

$$\begin{array}{ll} \sin 2\alpha = \text{①} \underline{2\sin\alpha\cos\alpha} & \tan 2\alpha = \text{③} \underline{\frac{2\tan\alpha}{1-\tan^2\alpha}} \\ \cos 2\alpha = \text{②} \underline{\cos^2\alpha - \sin^2\alpha} = \underline{1 - 2\sin^2\alpha} = \underline{2\cos^2\alpha - 1} \end{array}$$

∴  $\frac{\pi}{2} < \alpha < \pi$  で、 $\sin \alpha = \frac{\sqrt{7}}{4}$  のとき、次の値を求めよう。

$$\begin{array}{ll} \text{④ } \sin 2\alpha & \cos^2\alpha = 1 - \frac{7}{16} \\ \text{⑤ } \cos 2\alpha & \cos\alpha = \pm\frac{3}{4} \rightarrow \cos\alpha = -\frac{3}{4}, \tan\alpha = -\frac{\sqrt{7}}{3} \\ \text{⑥ } \tan 2\alpha & \end{array}$$

$$\begin{array}{ll} \text{④ } \sin 2\alpha = 2 \cdot \frac{\sqrt{7}}{4} \cdot \left(-\frac{3}{4}\right) & \text{⑤ } \cos 2\alpha = 1 - \frac{7}{8} = \frac{1}{8} \\ = -\frac{3\sqrt{7}}{8} & \text{⑥ } \tan 2\alpha = \frac{-\frac{2\sqrt{7}}{3}}{1 - \frac{7}{9}} = \left(-\frac{2}{3}\sqrt{7}\right) \times \frac{9}{2} = -3\sqrt{7} \end{array}$$