



基本問題を確認しよう

数Ⅱ

加法定理の応用(解答)

① (1) $\frac{\pi}{2} \leq \alpha \leq \pi$ より, $\cos \alpha < 0$ なので,

$$\cos \alpha = -\sqrt{1 - \sin^2 \alpha} = -\sqrt{1 - \frac{9}{25}} = -\frac{4}{5}$$

$$\therefore \sin 2\alpha = 2 \sin \alpha \cos \alpha = 2 \cdot \frac{3}{5} \cdot \left(-\frac{4}{5}\right) = -\frac{24}{25}$$

$$(2) \cos 2\alpha = 1 - 2 \sin^2 \alpha = 1 - 2 \cdot \left(\frac{3}{5}\right)^2 = \frac{7}{25}$$

$$(3) \sin^2 \frac{\alpha}{2} = \frac{1 - \cos \alpha}{2} = \frac{1 + \frac{4}{5}}{2} = \frac{9}{10}$$

② 右の図より, $\sin x + \sqrt{3} \cos x = 2 \sin(\theta + 60^\circ)$

