

① $3^2 + 2 = 6(3) + k$

$11 = 18 + k \quad k = -7$

Ⓐ

$$\int x \sqrt{1 + 16x^2} dx$$

$$u = 1 + 16x^2$$

$$du = 32x dx$$

$$\frac{1}{16} du = x dx$$

$$\frac{1}{16} \int \sqrt{u} du$$

$$\rightarrow \frac{1}{16} \int u^{1/2} du$$

$$\frac{1}{16} \cdot \frac{2}{3} \cdot u^{3/2}$$

$$\frac{1}{24} (1 + 16x^2)^{3/2} \Big|_0^1$$

$$= \frac{1}{24} (9^{3/2} - 1^{3/2})$$

$$= \frac{1}{24} (27) = \frac{13}{12}$$

(13)