

数学演習 (1) 第 2 回 初等関数 解答

I. (1) $\arcsin 0 = 0$, $\arcsin\left(\pm\frac{1}{2}\right) = \pm\frac{\pi}{6}$, $\arcsin\left(\pm\frac{1}{\sqrt{2}}\right) = \pm\frac{\pi}{4}$, $\arcsin\left(\pm\frac{\sqrt{3}}{2}\right) = \pm\frac{\pi}{3}$, $\arcsin(\pm 1) = \pm\frac{\pi}{2}$

(複号同順)

(2) $\arccos 0 = \frac{\pi}{2}$, $\arccos \frac{1}{2} = \frac{\pi}{3}$, $\arccos\left(-\frac{1}{2}\right) = \frac{2\pi}{3}$, $\arccos \frac{1}{\sqrt{2}} = \frac{\pi}{4}$, $\arccos\left(-\frac{1}{\sqrt{2}}\right) = \frac{3\pi}{4}$,

$\arccos \frac{\sqrt{3}}{2} = \frac{\pi}{6}$, $\arccos\left(-\frac{\sqrt{3}}{2}\right) = \frac{5\pi}{6}$, $\arccos 1 = 0$, $\arccos(-1) = \pi$

(3) $\arctan 0 = 0$, $\arctan\left(\pm\frac{1}{\sqrt{3}}\right) = \pm\frac{\pi}{6}$, $\arctan(\pm 1) = \pm\frac{\pi}{4}$, $\arctan(\pm\sqrt{3}) = \pm\frac{\pi}{3}$ (複号同順)

II. (1) x (2) x (3) x (4) $\sqrt{1-x^2}$ (5) $\sqrt{1-x^2}$ (6) $\frac{x}{\sqrt{1-x^2}}$ (7) $\frac{\sqrt{1-x^2}}{x}$ (8) $\frac{1}{\sqrt{1+x^2}}$ (9) $\frac{x}{\sqrt{1+x^2}}$

III. (1) $\frac{3\pi}{5}$ (2) $-\frac{2\pi}{5}$ (3) $\frac{9\pi}{10}$ (4) $-\frac{\pi}{10}$

IV. 略