§2.9　無理式の計算

問題 2.9.1　$x \leq \dfrac{3}{2}$ より $3-2x \geq 0$ なので,

$$\sqrt{4x^2-12k+9} = \sqrt{(2x-3)^2} = \sqrt{(3-2x)^2} = 3-2x \ .$$

問題 2.9.2

$$\begin{aligned}\left(5+\sqrt{s^2+4}\right)\left(3-2\sqrt{s^2+4}\right) &= 15-10\sqrt{s^2+4}+3\sqrt{s^2+4}-2\sqrt{s^2+4}^{\,2} \\ &= 15-7\sqrt{s^2+4}-2(s^2+4) \\ &= -2s^2+7-7\sqrt{s^2+4} \ .\end{aligned}$$

問題 2.9.3

$$\begin{aligned}\frac{a+\sqrt{a^2-9}}{a-\sqrt{a^2-9}} &= \frac{\left(a+\sqrt{a^2-9}\right)\left(a+\sqrt{a^2-9}\right)}{\left(a-\sqrt{a^2-9}\right)\left(a+\sqrt{a^2-9}\right)} \\ &= \frac{a^2+2a\sqrt{a^2-9}+\sqrt{a^2-9}^{\,2}}{a^2-\sqrt{a^2-9}^{\,2}} = \frac{a^2+2a\sqrt{a^2-9}+(a^2-9)}{a^2-(a^2-9)} \\ &= \frac{2a^2-9+2a\sqrt{a^2-9}}{9} \ .\end{aligned}$$