§8.9　冪関数

問題 8.9.1

(1)
$$f(81) = 81^{\frac{3}{4}} = (3^4)^{\frac{3}{4}} = 3^3 = 27 \ .$$

(2)
$$f\Big(\frac{11}{16}\Big) = \Big(\frac{11}{16}\Big)^{\frac{3}{4}} = \frac{11^{\frac{3}{4}}}{(2^4)^{\frac{3}{4}}} = \frac{11^{\frac{3}{4}}}{2^3} = \frac{11^{\frac{3}{4}}}{8} \ .$$

(3)
$$f(47) = 49^{\frac{3}{4}} = (7^2)^{\frac{3}{4}} = 7^{\frac{3}{2}} = 7\sqrt{7} \ .$$

問題 8.9.2　$4x-3 \geq 0$ なので，方程式 $(4x-3)^{\frac{7}{5}} = 9$ より，$\Big\{(4x-3)^{\frac{7}{5}}\Big\}^{\frac{5}{7}} = 9^{\frac{5}{7}}$ ，$4x-3 = 9^{\frac{5}{7}}$ ，従って $x = \dfrac{9^{\frac{5}{7}}+3}{4}$ ．