

解答

- |                          |                       |                        |
|--------------------------|-----------------------|------------------------|
| 1. (1) 11                | (2) 3                 | (3) 2                  |
| 2. (1) 1                 | (2) $\frac{1}{32}$    | (3) 27                 |
| (4) $\frac{1}{256}$      | (5) $\frac{1}{8}$     | (6) $\frac{1}{27}$     |
| (7) $\frac{1}{4}$        | (8) $\frac{256}{9}$   | (9) 1                  |
| 3. (1) $3^{\frac{1}{3}}$ | (2) $2^{\frac{1}{4}}$ | (3) $3^{-\frac{3}{4}}$ |
| 4. (1) $\sqrt[8]{a^5}$   | (2) $\sqrt[8]{a}$     | (3) $\sqrt[12]{a^7}$   |
| (4) $\sqrt[12]{a^5}$     | (5) $\sqrt[6]{a^5}$   | (6) $\sqrt[3]{a}$      |

解説

1. (1) 与式 = 11 (2) 与式 =  $\sqrt[6]{3^2 \times 3^4} = \sqrt[6]{3^6} = (\sqrt[6]{3})^6 = 3$   
 (3) 与式 =  $\sqrt[5]{2^3} \sqrt[5]{2^2} = \sqrt[5]{2^3 \times 2^2} = \sqrt[5]{2^5} = (\sqrt[5]{2})^5 = 2$
2. (1) 与式 = 1 (2) 与式 =  $\frac{1}{2^5} = \frac{1}{32}$   
 (3) 与式 =  $3^3 = 27$  (4) 与式 =  $\frac{1}{(2^4)^2} = \frac{1}{2^8} = \frac{1}{256}$   
 (5) 与式 =  $2^{5+(-8)} = 2^{-3} = \frac{1}{8}$  (6) 与式 =  $3^{3-6} = 3^{-3} = \frac{1}{27}$   
 (7) 与式 =  $2^4 \times (2^{-1})^6 = 2^4 \times 2^{-6} = 2^{4-6} = 2^{-2} = \frac{1}{4}$   
 (8) 与式 =  $(2^2 \times 3)^4 \times 3^{-6} = 2^8 \times 3^4 \times 3^{-6} = 2^8 \times 3^{4-6} = 256 \times 3^{-2} = \frac{256}{9}$   
 (9) 与式 =  $(2 \times 3^2)^2 \times 2^{-2} \times (3^{-1})^4 = 2^2 \times 3^4 \times 2^{-2} \times 3^{-4} = 2^{2-2} \times 3^{4-4} = 2^0 \times 3^0 = 1 \times 1 = 1$
3. (1) 与式 =  $3^{\frac{1}{3}}$  (2) 与式 =  $(2^{\frac{3}{6}})^{\frac{1}{2}} = 2^{\frac{1}{2} \times \frac{1}{2}} = 2^{\frac{1}{4}}$  (3) 与式 =  $\frac{1}{3^{\frac{3}{4}}} = 3^{-\frac{3}{4}}$
4. (1) 与式 =  $\sqrt[8]{a^5}$  (2) 与式 =  $a^{\frac{125}{1000}} = a^{\frac{1}{8}} = \sqrt[8]{a}$   
 (3) 与式 =  $a^{\frac{1}{3} + \frac{1}{4}} = a^{\frac{7}{12}} = \sqrt[12]{a^7}$  (4) 与式 =  $a^{\frac{3}{4} - \frac{1}{3}} = a^{\frac{5}{12}} = \sqrt[12]{a^5}$   
 (5) 与式 =  $a^{\frac{2}{4} + \frac{1}{3}} = a^{\frac{5}{6}} = \sqrt[6]{a^5}$  (6) 与式 =  $a^{\frac{2}{3} - \frac{2}{6}} = a^{\frac{1}{3}} = \sqrt[3]{a}$