

9-3-5 根号のついた数の乗除混合計算・加減

例1 次の計算をなさい。

$$\textcircled{1} \quad \frac{3\sqrt{3}}{4} \times \frac{2}{\sqrt{6}} \div \frac{\sqrt{5}}{8}$$

$$\textcircled{2} \quad \frac{\sqrt{5}}{\sqrt{12}} \div 3\sqrt{2} \times \left(-\sqrt{\frac{2}{5}}\right)$$

$$\textcircled{3} \quad \sqrt{18} \div 4\sqrt{30} \times \sqrt{27}$$

1 次の計算をなさい。

$$\textcircled{1} \quad \frac{\sqrt{10}}{\sqrt{7}} \times \frac{\sqrt{21}}{3} \div \frac{\sqrt{20}}{5}$$

$$\textcircled{2} \quad \frac{8}{\sqrt{3}} \div \sqrt{\frac{8}{7}} \div \frac{1}{\sqrt{12}}$$

$$\textcircled{3} \quad \sqrt{30} \times (-\sqrt{50}) \div 2\sqrt{3}$$

$$\textcircled{4} \quad -4\sqrt{35} \times (-\sqrt{3}) \div 8\sqrt{15}$$

$$\textcircled{5} \quad \frac{2\sqrt{3}}{\sqrt{7}} \div \sqrt{2} \times \left(-\frac{7\sqrt{2}}{3}\right)$$

$$\textcircled{6} \quad -\frac{2\sqrt{5}}{5} \div \left(-\frac{\sqrt{3}}{2}\right) \times \left(-\sqrt{\frac{2}{3}}\right)$$

例2 次の計算をなさい。

① $4\sqrt{2} - 2\sqrt{3} + \sqrt{2} + 3\sqrt{3}$

② $\sqrt{20} - 2\sqrt{12} - \sqrt{45} + 3\sqrt{3}$

③ $2\sqrt{6} - \sqrt{2} + \sqrt{50} - \frac{12}{\sqrt{6}}$

2 次の計算をなさい。

① $2\sqrt{10} - 3\sqrt{6} - \sqrt{10} + 3\sqrt{6}$

② $\sqrt{63} - \sqrt{28} + 3\sqrt{7}$

③ $\sqrt{48} - \sqrt{8} + \frac{6}{\sqrt{2}} - \frac{9}{\sqrt{3}}$

④ $3\sqrt{5} - 2\sqrt{13} + \sqrt{13} + \sqrt{5}$

⑤ $-\sqrt{24} - 3\sqrt{27} - \sqrt{48} + 3\sqrt{54}$

⑥ $2\sqrt{15} + \frac{21}{\sqrt{7}} - \sqrt{7} + \frac{10\sqrt{3}}{\sqrt{5}}$

宿題

① 次の計算をなさい。

$$\textcircled{1} \quad \frac{5}{\sqrt{2}} \times \frac{\sqrt{6}}{3} \div \sqrt{\frac{3}{10}}$$

$$\textcircled{2} \quad \frac{\sqrt{2}}{5} \div \sqrt{\frac{18}{5}} \times \frac{3\sqrt{10}}{4}$$

$$\textcircled{3} \quad 6 \times (-\sqrt{3}) \div \sqrt{60}$$

$$\textcircled{4} \quad -\sqrt{48} \times (-3\sqrt{3}) \div 6\sqrt{2}$$

$$\textcircled{5} \quad \frac{\sqrt{6}}{5} \div \sqrt{\frac{2}{7}} \times \left(-\frac{10}{\sqrt{14}}\right)$$

$$\textcircled{6} \quad -\frac{\sqrt{6}}{3} \div \left(-\frac{\sqrt{27}}{\sqrt{5}}\right) \times \left(-\sqrt{\frac{3}{20}}\right)$$

② 次の計算をなさい。

$$\textcircled{1} \quad 4\sqrt{3} - 2\sqrt{6} - \sqrt{6} + 3\sqrt{3}$$

$$\textcircled{2} \quad \sqrt{80} - \sqrt{45} + \sqrt{50}$$

$$\textcircled{3} \quad \sqrt{40} - \sqrt{24} + \frac{10}{\sqrt{10}} - \frac{9\sqrt{2}}{\sqrt{3}}$$

$$\textcircled{4} \quad 3\sqrt{7} - 2\sqrt{2} - \sqrt{2} + 2\sqrt{7}$$

$$\textcircled{5} \quad -\sqrt{98} - \sqrt{75} + 2\sqrt{72} + 3\sqrt{3}$$

$$\textcircled{6} \quad 2\sqrt{8} + \frac{30}{\sqrt{5}} - \sqrt{5} + 2\sqrt{18}$$

宿題解答

①

① $\frac{5\sqrt{10}}{3}$

② $\frac{\sqrt{2}}{4}$

③ $-\frac{3\sqrt{5}}{5}$

④ $3\sqrt{2}$

⑤ $-\sqrt{6}$

⑥ $-\frac{\sqrt{6}}{18}$

②

① $7\sqrt{3}-3\sqrt{6}$

② $\sqrt{5}+5\sqrt{2}$

③ $3\sqrt{10}-5\sqrt{6}$

④ $5\sqrt{7}-3\sqrt{2}$

⑤ $5\sqrt{2}-2\sqrt{3}$

⑥ $10\sqrt{2}+5\sqrt{5}$