

確認問題

根号を含む式の計算 (1)

50 次の計算をなさい。

$$\begin{aligned}(1) \quad 2\sqrt{7} + 8\sqrt{7} &= (2+8)\sqrt{7} \\ &= 10\sqrt{7}\end{aligned}$$

$$\begin{aligned}(2) \quad 4\sqrt{5} + \sqrt{5} &= (4+1)\sqrt{5} \\ &= 5\sqrt{5}\end{aligned}$$

ふりかえろう!

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$$\begin{aligned}(3) \quad 7\sqrt{6} - 2\sqrt{6} &= (7-2)\sqrt{6} \\ &= 5\sqrt{6}\end{aligned}$$

$$\begin{aligned}(4) \quad 3\sqrt{3} - 5\sqrt{3} &= (3-5)\sqrt{3} \\ &= -2\sqrt{3}\end{aligned}$$

51 次の計算をなさい。

$$\begin{aligned}(1) \quad \sqrt{20} + 3\sqrt{5} &= \sqrt{2^2 \times 5} + 3\sqrt{5} \\ &= 2\sqrt{5} + 3\sqrt{5} \\ &= (2+3)\sqrt{5} \\ &= 5\sqrt{5}\end{aligned}$$

$$\begin{aligned}(2) \quad 3\sqrt{6} + \sqrt{24} &= 3\sqrt{6} + \sqrt{2^2 \times 6} \\ &= 3\sqrt{6} + 2\sqrt{6} \\ &= (3+2)\sqrt{6} \\ &= 5\sqrt{6}\end{aligned}$$

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$$\begin{aligned}(3) \quad 4\sqrt{3} - \sqrt{27} &= 4\sqrt{3} - \sqrt{3^3} \\ &= 4\sqrt{3} - 3\sqrt{3} \\ &= (4-3)\sqrt{3} \\ &= \sqrt{3}\end{aligned}$$

$$\begin{aligned}(4) \quad \sqrt{50} - 6\sqrt{2} &= \sqrt{5^2 \times 2} - 6\sqrt{2} \\ &= 5\sqrt{2} - 6\sqrt{2} \\ &= (5-6)\sqrt{2} \\ &= -\sqrt{2}\end{aligned}$$

$$\begin{aligned}(5) \quad \sqrt{12} + \sqrt{48} &= \sqrt{2^2 \times 3} + \sqrt{2^2 \times 2^2 \times 3} \\ &= 2\sqrt{3} + 2 \times 2\sqrt{3} \\ &= 2\sqrt{3} + 4\sqrt{3} \\ &= (2+4)\sqrt{3} \\ &= 6\sqrt{3}\end{aligned}$$

$$\begin{aligned}(6) \quad 3\sqrt{8} + \sqrt{32} &= 3\sqrt{2^2 \times 2} + \sqrt{2^2 \times 2^2 \times 2} \\ &= 3 \times 2\sqrt{2} + 2 \times 2\sqrt{2} \\ &= 6\sqrt{2} + 4\sqrt{2} \\ &= (6+4)\sqrt{2} \\ &= 10\sqrt{2}\end{aligned}$$

52 次の計算をなさい。

$$\begin{aligned}
 (1) \quad \frac{1}{2\sqrt{6}} + \frac{\sqrt{6}}{12} &= \frac{1 \times \sqrt{6}}{2\sqrt{6} \times \sqrt{6}} + \frac{\sqrt{6}}{12} \\
 &= \frac{\sqrt{6}}{2 \times 6} + \frac{\sqrt{6}}{12} \\
 &= \frac{\sqrt{6}}{12} + \frac{\sqrt{6}}{12} \\
 &= \frac{(1+1)\sqrt{6}}{12} = \frac{2\sqrt{6}}{12} \\
 &= \frac{\sqrt{6}}{6}
 \end{aligned}$$

$$\begin{aligned}
 (2) \quad \frac{2\sqrt{2}}{\sqrt{3}} + \frac{4\sqrt{6}}{3} &= \frac{2\sqrt{2} \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}} + \frac{4\sqrt{6}}{3} \\
 &= \frac{2\sqrt{6}}{3} + \frac{4\sqrt{6}}{3} \\
 &= \frac{(2+4)\sqrt{6}}{3} = \frac{6\sqrt{6}}{3} \\
 &= 2\sqrt{6}
 \end{aligned}$$

$$\begin{aligned}
 (3) \quad \frac{3}{4\sqrt{2}} - \frac{\sqrt{2}}{8} &= \frac{3 \times \sqrt{2}}{4\sqrt{2} \times \sqrt{2}} - \frac{\sqrt{2}}{8} \\
 &= \frac{3\sqrt{2}}{4 \times 2} - \frac{\sqrt{2}}{8} \\
 &= \frac{3\sqrt{2}}{8} - \frac{\sqrt{2}}{8} \\
 &= \frac{(3-1)\sqrt{2}}{8} = \frac{2\sqrt{2}}{8} \\
 &= \frac{\sqrt{2}}{4}
 \end{aligned}$$

$$\begin{aligned}
 (4) \quad \frac{1}{2\sqrt{3}} - \frac{5\sqrt{3}}{6} &= \frac{1 \times \sqrt{3}}{2\sqrt{3} \times \sqrt{3}} - \frac{5\sqrt{3}}{6} \\
 &= \frac{\sqrt{3}}{2 \times 3} - \frac{5\sqrt{3}}{6} \\
 &= \frac{\sqrt{3}}{6} - \frac{5\sqrt{3}}{6} \\
 &= \frac{(1-5)\sqrt{3}}{6} = \frac{-4\sqrt{3}}{6} \\
 &= -\frac{2\sqrt{3}}{3}
 \end{aligned}$$

$$\begin{aligned}
 (5) \quad \frac{\sqrt{6}}{2} - \frac{\sqrt{3}}{\sqrt{2}} &= \frac{\sqrt{6}}{2} - \frac{\sqrt{3} \times \sqrt{2}}{\sqrt{2} \times \sqrt{2}} \\
 &= \frac{\sqrt{6}}{2} - \frac{\sqrt{6}}{2} \\
 &= \frac{(1-1)\sqrt{6}}{2} \\
 &= 0
 \end{aligned}$$

$$\begin{aligned}
 (6) \quad \frac{3}{\sqrt{5}} + \frac{1}{2\sqrt{5}} &= \frac{3 \times \sqrt{5}}{\sqrt{5} \times \sqrt{5}} + \frac{1 \times \sqrt{5}}{2\sqrt{5} \times \sqrt{5}} \\
 &= \frac{3\sqrt{5}}{5} + \frac{\sqrt{5}}{2 \times 5} \\
 &= \frac{3\sqrt{5}}{5} + \frac{\sqrt{5}}{10} \\
 &= \frac{6\sqrt{5}}{10} + \frac{\sqrt{5}}{10} \quad \left. \begin{array}{l} \text{通分} \\ \leftarrow \end{array} \right\} \\
 &= \frac{(6+1)\sqrt{5}}{10} \\
 &= \frac{7\sqrt{5}}{10}
 \end{aligned}$$