

$$\textcircled{1} \frac{\sqrt{3}}{\sqrt{48}} \cdot \frac{\sqrt{48}}{\sqrt{48}} = \frac{\sqrt{3 \cdot 48}}{\sqrt{48 \cdot 48}}$$

$$= \frac{\sqrt{3 \cdot 48}}{48} = \frac{12 \div 12}{48 \div 12} = \frac{1}{4}$$

$$\begin{aligned} &\sqrt{3 \cdot 48} \\ &\sqrt{3 \cdot 4 \cdot 12} \\ &\sqrt{3 \cdot 2 \cdot 2 \cdot 4 \cdot 3} \\ &\textcircled{3} \cdot \textcircled{2} \cdot \textcircled{2} \cdot \textcircled{2} \cdot \textcircled{3} \\ &2 \cdot 2 \cdot 3 = 12 \end{aligned}$$

Scratch

$$\begin{aligned} 4 \times 1 &= 4 \\ \frac{1}{2} \times \frac{1}{1} &= \frac{1}{2} \\ &\frac{2}{2} \\ &\frac{3}{3} \\ &\frac{\sqrt{48}}{\sqrt{48}} \end{aligned}$$

$$\textcircled{2} \frac{\sqrt{12}}{\sqrt{4}} \cdot \frac{\sqrt{4}}{\sqrt{4}} = \frac{\sqrt{12 \cdot 4}}{4} = \frac{\cancel{4}\sqrt{3}}{\cancel{4}} = \sqrt{3}$$

$$\begin{aligned} &\sqrt{12 \cdot 4} \\ &\sqrt{4 \cdot 3 \cdot 4} \\ &4\sqrt{3} \end{aligned}$$

$$\begin{aligned} &\sqrt{8 \cdot 100} \\ &\sqrt{4 \cdot 2 \cdot 10 \cdot 10} \\ &\textcircled{2} \cdot \textcircled{2} \cdot \textcircled{2} \cdot \textcircled{10} \cdot \textcircled{10} \\ &2 \cdot 10\sqrt{2} \\ &20\sqrt{2} \end{aligned}$$

$$\textcircled{4} \frac{\sqrt{8}}{\sqrt{100}} \cdot \frac{\sqrt{100}}{\sqrt{100}} = \frac{\sqrt{8 \cdot 100}}{100} = \frac{20\sqrt{2}}{100} = \frac{\sqrt{2}}{5}$$

$$\textcircled{8} \frac{2\sqrt{3}}{4\sqrt{27}} \cdot \frac{\sqrt{27}}{\sqrt{27}} = \frac{2\sqrt{3 \cdot 27}}{4\sqrt{27 \cdot 27}} = \frac{2\sqrt{3 \cdot 27}}{4 \cdot 27}$$

$$\begin{aligned} &\sqrt{3 \cdot 27} \\ &\sqrt{3 \cdot 9 \cdot 3} \\ &\sqrt{3 \cdot 3 \cdot 3 \cdot 3} \\ &3 \cdot 3 = 9 \end{aligned}$$

$$\begin{aligned} &= \frac{2 \cdot 9}{108} = \frac{18 \div 18}{108 \div 18} \\ &= \frac{1}{6} \end{aligned}$$

$$\textcircled{9} \frac{2\sqrt{3}}{2\sqrt{12}} = \frac{\sqrt{3}}{\sqrt{12}} \cdot \frac{\sqrt{12}}{\sqrt{12}} = \frac{\sqrt{3 \cdot 12}}{12} = \frac{6}{12} = \frac{1}{2}$$

$$\begin{aligned} &\sqrt{3 \cdot 12} \quad 36 \\ &\sqrt{3 \cdot 4 \cdot 3} \\ &\sqrt{3 \cdot 2 \cdot 2 \cdot 3} \quad 36 \\ &2 \cdot 3 = 6 \end{aligned}$$