$= \frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$ Multiply by a form of 1 to rationalize the denominator.

$= \frac{2\sqrt{3}}{3}$ Simplify.

- Check using a calculator: $\sqrt{\frac{4}{3}} \approx 1.1547005$ and $\frac{2\sqrt{3}}{3} \approx 1.1547005$.

EXERCISES

Simplify each expression.

1. $\sqrt{5} \cdot \sqrt{10}$ $5\sqrt{2}$
2. $\sqrt{243}$ $9\sqrt{3}$
3. $\sqrt{128} \div \sqrt{2}$ 8
4. $\sqrt{\frac{125}{4}}$ $\frac{5\sqrt{5}}{2}$
5. $\sqrt{6} \cdot \sqrt{8}$ $4\sqrt{3}$
6. $\frac{\sqrt{36}}{\sqrt{3}}$ $2\sqrt{3}$
7. $\frac{\sqrt{144}}{\sqrt{2}}$ $6\sqrt{2}$
8. $\sqrt{3} \cdot \sqrt{12}$ 6
9. $\sqrt{72} \div \sqrt{2}$ 6
10. $\sqrt{169}$ 13
11. $28 \div \sqrt{8}$ $7\sqrt{2}$
12. $\sqrt{300} \div \sqrt{5}$ $2\sqrt{15}$
13. $\sqrt{12} \cdot \sqrt{2}$ $2\sqrt{6}$
14. $\frac{\sqrt{24}}{\sqrt{3}}$ $2\sqrt{2}$
15. $\sqrt{\frac{75}{3}}$ 5
16. $\sqrt{18} \cdot \sqrt{2}$ 6
17. $\sqrt{68}$ $2\sqrt{17}$
18. $\sqrt{3} \cdot \sqrt{15}$ $3\sqrt{5}$
19. $\frac{\sqrt{20}}{\sqrt{5}}$ 2
20. $45 \div \sqrt{3}$ $15\sqrt{3}$
21. $\sqrt{\frac{25}{20}}$ $\frac{\sqrt{5}}{2}$
22. $\sqrt{\frac{8}{28}}$ $\frac{\sqrt{14}}{7}$
23. $\frac{\sqrt{6} \cdot \sqrt{3}}{\sqrt{9}}$ $\sqrt{2}$
24. $\frac{\sqrt{3} \cdot \sqrt{15}}{\sqrt{2}}$ $\frac{3\sqrt{10}}{2}$

25. Find and simplify the difference of the golden ratio (see page 378, Exercise 51) and its multiplicative inverse. 1

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