

(4)  
calculator

## Simplifying Radical Expressions: Dividing and rationalizing the Denominator

$$\frac{6}{3} = \underline{\hspace{2cm}}$$

$$\frac{\sqrt{6}}{\sqrt{2}} = \underline{\hspace{2cm}}$$

$$\frac{\sqrt{6}}{2} = \underline{\hspace{2cm}}$$

$$\frac{12\sqrt{6}}{2} = \underline{\hspace{2cm}}$$

$$\frac{12\sqrt{6}}{\sqrt{2}} = \underline{\hspace{2cm}}$$

### Simplest form for fractions with $\sqrt{\hspace{1cm}}$

1. No perfect square factor under  $\sqrt{\hspace{1cm}}$       ex.  $\sqrt{75} = \sqrt{25}\sqrt{3} = 5\sqrt{3}$

2. No fractions under a  $\sqrt{\hspace{1cm}}$       ex.  $\sqrt{\frac{3}{4}} = \frac{\sqrt{3}}{\sqrt{4}} = \frac{\sqrt{3}}{2}$

3. No  $\sqrt{\hspace{1cm}}$  in a denominator      ex.  $\frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{\sqrt{9}} = \frac{2\sqrt{3}}{3}$

4. Must be reduced      ex.  $\frac{8\sqrt{5}}{2} = 4\sqrt{5}$

11)  $\frac{\sqrt{8}}{\sqrt{7}}$

12)  $\frac{7}{8\sqrt{7}}$

13)  $\frac{\sqrt{2}}{\sqrt{6}}$

14)  $\frac{\sqrt{21}}{\sqrt{15}}$

15)  $\frac{\sqrt{3}}{6\sqrt{7}}$

16)  $\frac{\sqrt{5}}{\sqrt{3}}$

17)  $\frac{\sqrt{15}}{3\sqrt{6}}$

18)  $\frac{\sqrt{8}}{2\sqrt{7}}$

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 (6) **Homework**

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Simplify each radical expression. ODD PROBLEMS REQUIRED

1.  $\sqrt{5} \sqrt{15}$

2.  $\sqrt{14} \sqrt{35}$

3.  $\sqrt{2} (\sqrt{3} - \sqrt{5})$

4.  $\sqrt{3} (\sqrt{27} - \sqrt{3})$

5.  $\sqrt{2} (\sqrt{6} + \sqrt{10})$

6.  $\sqrt{7} (3 - \sqrt{7})$

7.  $\sqrt{5} (3\sqrt{5} - 4\sqrt{3})$

8.  $\sqrt{y} (\sqrt{y} - \sqrt{5})$

(6)  
calculator**Homework** Simplify each radical expression. ODD PROBLEMS REQUIRED

21.  $\sqrt{\frac{27}{16}}$

22.  $\sqrt{\frac{14}{y^2}}$

23.  $\sqrt{\frac{24}{25}}$

24.  $\sqrt{\frac{7}{5}}$

25.  $\sqrt{\frac{10}{7}}$

26.  $\frac{2}{\sqrt{3}}$

27.  $\frac{5}{\sqrt{10}}$

28.  $\frac{6}{\sqrt{3}}$

29.  $\frac{2}{\sqrt{6}}$

15)  $-3\sqrt{20} - \sqrt{5}$

16)  $2\sqrt{45} - 2\sqrt{5}$

17)  $3\sqrt{18} - 2\sqrt{2}$

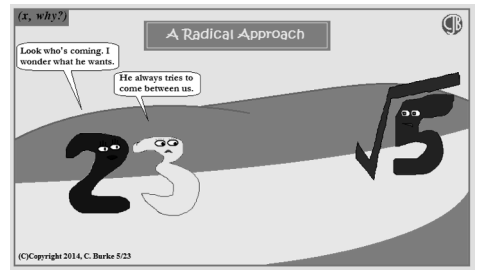
18)  $-3\sqrt{18} + 3\sqrt{8} - \sqrt{24}$

19)  $3\sqrt{18} + 3\sqrt{12} + 2\sqrt{27}$

20)  $-3\sqrt{5} - \sqrt{6} - \sqrt{5}$

Simplify each expression completely.

2.  $\sqrt{14} \sqrt{35}$



4.  $\sqrt{3}(\sqrt{27} - \sqrt{3})$

24.  $\sqrt{\frac{7}{5}}$

26.  $\frac{2}{\sqrt{3}}$

16)  $2\sqrt{45} - 2\sqrt{5}$

18)  $-3\sqrt{18} + 3\sqrt{8} - \sqrt{24}$