Warm Up

Simplify.

1) $3\sqrt{18} - 2\sqrt{18}$

$3\sqrt{2}$

2) $-3\sqrt{45} - 2\sqrt{45}$

$-15\sqrt{5}$

3) $\sqrt[3]{4} \cdot \sqrt[3]{20}$

$2\sqrt[3]{10}$

4) $\sqrt[3]{100} \cdot \sqrt[3]{25}$

$5\sqrt[3]{20}$

5) $\sqrt{10} \cdot \sqrt{15}$

$5\sqrt{6}$

Rationalizing the Denominator

You can't have a radical in the denominator, so we will rationalize the denominator. To do this you multiply both the numerator and denominator by the radical in the denominator.

$\sqrt{a} \cdot \sqrt{a} = a$

$\frac{2}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{2\sqrt{5}}{5}$

$\sqrt{25} = 5$

$\frac{7}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} = \frac{7\sqrt{7}}{7} = \sqrt{7}$

$\frac{3}{4\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{3\sqrt{3}}{12}$

$3 = \frac{\sqrt{3}}{4}$

Practice

a. $\frac{1}{\sqrt{3}}$ $\sqrt{3}$ $\sqrt{3}$

$\frac{\sqrt{3}}{3}$

b. $\frac{4\sqrt{2}}{\sqrt{5}}$ $\sqrt{5}$ $\sqrt{5}$

$\frac{4\sqrt{10}}{5}$

c. $\frac{2\sqrt{6}}{\sqrt{3}}$ $\sqrt{3}$ $\sqrt{3}$ $= \frac{2\sqrt{18}}{3}$

18

9 2

3 3

$\frac{6\sqrt{2}}{3}$

$2\sqrt{2}$

Practice with in class worksheet.

18. $\frac{2}{\sqrt{12}} \cdot \frac{\sqrt{12}}{\sqrt{12}} = \frac{2\sqrt{12}}{12}$

$12 = 4 \cdot 3$

$2\sqrt{3}$

$\frac{4\sqrt{3}}{12} = \frac{\sqrt{3}}{3}$

15. $(27x^4y)^{2/3}$

$(\sqrt[3]{27})^2$

$27^{2/3} \cdot x^{4 \cdot 2/3} \cdot y^{2/3}$

$9x^4y^{2/3}$