Section 6-2
Multiplying and Dividing
Radical Expressions

Is $2^2 \cdot 3^2 = (2 \cdot 3)^2$?

$4 \cdot 9 \quad 6^2$

$36 = 36$ yes

Is $\sqrt{2} \cdot \sqrt{3} = \sqrt{2 \cdot 3}$?

yes

(check on calcs)

If a and b are real numbers, then

$\sqrt[n]{a} \cdot \sqrt[n]{b} = \sqrt[n]{a \cdot b}$

Can we simplify?

$\sqrt{5} \cdot \sqrt[3]{12}$

No, not the same index (n)

To reduce a radical as much as possible, put the radical into its simplest form.

$\sqrt{12} = \sqrt{4 \cdot 3} = 2\sqrt{3}$

$\sqrt[3]{128x^7}$

$64 \cdot 2 x^6 x$

$= \sqrt[3]{64 \cdot 2 x^6 \cdot x}$

$4x^2\sqrt[3]{2x}$

Simplify:

$\sqrt{45x^5y^3} \cdot \sqrt{35xy^4}$

$= \sqrt{1575x^6y^7}$

$= \sqrt{225 \cdot 7 \cdot x^6 \cdot y^6 \cdot y}$

$15x^3y^3\sqrt{7y}$

pg. 371 #33.

$-\sqrt{2x^2y^2} \cdot 2\sqrt{15x^5y}$

$-2\sqrt{30x^7y^3}$

$= -2\sqrt{30x^6 \cdot x \cdot y^2 \cdot y}$

$= -2x^3y\sqrt{30xy}$

#61.

$\sqrt{2}(\sqrt{50} + 7)$

$\sqrt{100} + 7\sqrt{2}$

$10 + 7\sqrt{2}$

Hwk: pg. 371 - 372
#16, 18, 20 - 36 (4th),
58 - 62 evens, 70, 72,
73 - 76 all