

Intermediate Algebra

7-2

(Day 2)

Properties of Radicals

Simplify.

44) $\sqrt{35} \cdot \sqrt{14}$

$$\sqrt{490}$$

$$\sqrt{49 \cdot 10}$$

$$= \boxed{7\sqrt{10}}$$

50) $\sqrt{5x^3y} \sqrt{10x^3y^4}$

$$\sqrt{50x^6y^5}$$

$$\sqrt{25 \cdot 2x^6y^5}$$

$$= 5x^3y^2\sqrt{2y}$$

58) $\sqrt{y}(\sqrt{y}-\sqrt{5})$

$$\sqrt{y^2} - \sqrt{5y}$$

$$= \boxed{y - \sqrt{5y}}$$

Simplify.

62) $(\sqrt{2x} + 4)^2$ FOIL

$$(\sqrt{2x} + 4)(\sqrt{2x} + 4)$$

$$\sqrt{4x^2} + 4\sqrt{2x} + 4\sqrt{2x} + 16$$

$$= \boxed{2x + 16 + 8\sqrt{2x}}$$

Conjugate pair - binomials of the form $(a+b)(a-b)$

Conjugate pair shortcut - FOIL with just Firsts and Lasts.

Simplify.

70) $(\sqrt{y} - 2)(\sqrt{y} + 2)$

$$\sqrt{y^2} - 4$$

$$= \boxed{y - 4}$$

A radical expression is in **Simplest Radical Form** when:

1) There are no perfect square factors beneath the the radical.

2) There are no fractions beneath the radical. $\sqrt{\frac{3}{4}} = \frac{\sqrt{3}}{\sqrt{4}} = \frac{\sqrt{3}}{2}$

3) There are no radicals in the denominator of a fraction.

$$\frac{1\sqrt{2}}{\sqrt{2}\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{4}} = \frac{\sqrt{2}}{2}$$

square S	
1	1
2	4
3	9
4	16
5	25
6	36
7	49

Simplify.

$$76) \frac{\sqrt{42a^3b^5}}{\sqrt{14a^2b}}$$

$$\frac{\sqrt{6ab^4}}{\sqrt{2}}$$

$$\frac{\sqrt{3ab^4}}{b^2\sqrt{3a}}$$

$$82) \frac{5\sqrt{5x}}{\sqrt{5x}\sqrt{5x}}$$

$$\frac{5\sqrt{5x}}{\sqrt{25x^2}}$$

$$\frac{5\sqrt{5x}}{5x} = \frac{\sqrt{5x}}{x}$$

Simplify.

$$86) \frac{3\sqrt[3]{4}}{\sqrt[3]{2}\sqrt[3]{4}}$$

$$\frac{3\sqrt[3]{4}}{2\sqrt[3]{8}}$$

$$\frac{3\sqrt[3]{4}}{2}$$

cubes	
1	1
2	8
3	27
4	64
5	125

$$92) \frac{\sqrt{24a^2b}}{\sqrt{18ab^4}} = \frac{\sqrt{4a}}{\sqrt{3b^4}}$$

$$= \frac{2\sqrt{a}\sqrt{3}}{b^2\sqrt{3}\sqrt{3}}$$

$$= \frac{2\sqrt{3a}}{b^2\sqrt{9}}$$

$$= \frac{2\sqrt{3a}}{3b^2}$$

Assignment:
pg. 390
44-92 even