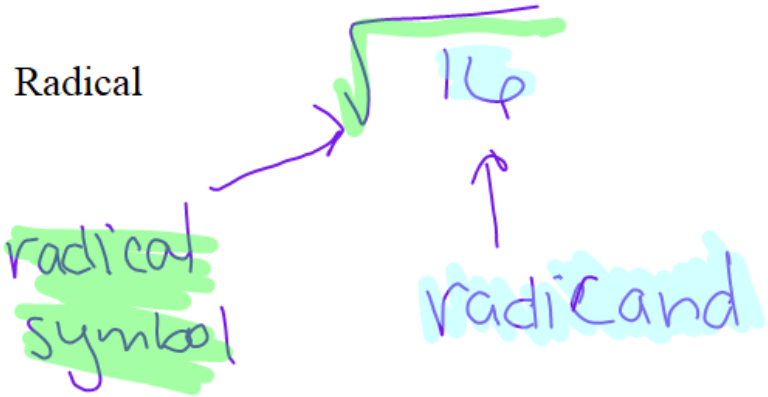
11-1 Simplifying Radicals

Radical



Multiplying Radicals

$$\sqrt{2} \cdot \sqrt{8} = \sqrt{2 \cdot 8} = \sqrt{16} = 4$$

or

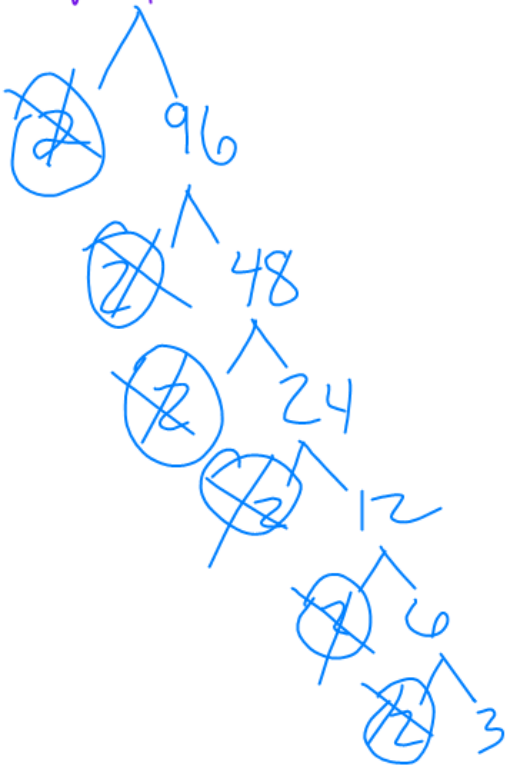
$$\sqrt{54} = \sqrt{6} \cdot \sqrt{9} = \sqrt{9} \cdot \sqrt{6} = 3\sqrt{6}$$

$\sqrt{16} = 4$

Simplify. $\sqrt{25} = 5$

$\sqrt{36} = 6$

$\sqrt{192}$



$2 \cdot 2 \cdot 2\sqrt{3}$

$8\sqrt{3}$

$\sqrt{50}$

$\sqrt{25 \cdot 2}$

$\sqrt{25} \cdot \sqrt{2}$

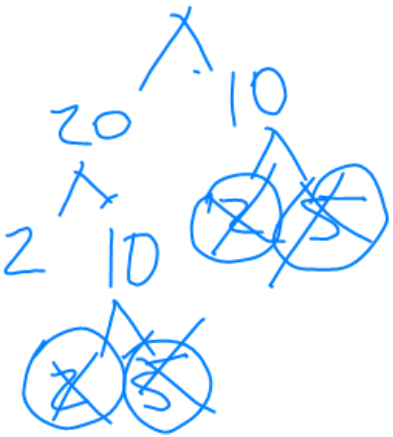
$5\sqrt{2}$

$\sqrt{18}$

$3\sqrt{2}$

Simplify.

$\sqrt{200}$



$5 \cdot 2$

$10\sqrt{2}$

$\sqrt{75}$

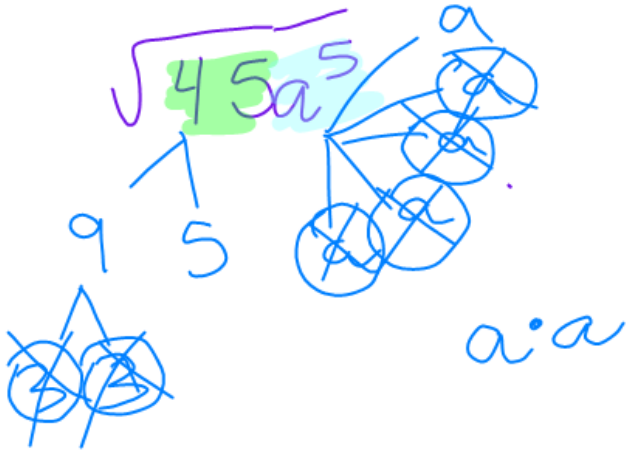
$5\sqrt{3}$

$\sqrt{80}$

$4\sqrt{5}$

Simplify.

$\sqrt{45a^5}$



$9 \cdot 5 \cdot a \cdot a$

$3a^2\sqrt{5a}$

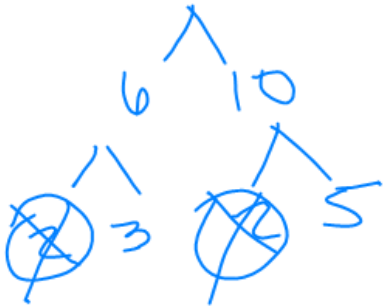
$\sqrt{27n^2}$

$9 \cdot 3 \cdot n \cdot n$

$3n\sqrt{3}$

Simplify.

$\sqrt{60a^7}$



$2a^3\sqrt{15a}$

$a^6 \cdot a^1$

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

$xy^2\sqrt{y}$

$y^4 \cdot y^1$

Simplify.

$\sqrt{8} \cdot \sqrt{12}$

$\sqrt{8 \cdot 12}$

$\sqrt{96}$

8 12 4 2 2 2 3

$2 \cdot 2\sqrt{6} = \boxed{4\sqrt{6}}$

$3\sqrt{2b} \cdot 4\sqrt{10b}$

$12\sqrt{20b^2}$

4 5 2 2

$\boxed{24b\sqrt{5}}$

Dividing Radicals

$$\sqrt{\frac{16}{25}} = \frac{\sqrt{16}}{\sqrt{25}} = \frac{4}{5}$$

Simplify.

$\sqrt{\frac{11}{49}}$

$\frac{\sqrt{11}}{\sqrt{49}} = \frac{\sqrt{11}}{7}$

$\sqrt{\frac{25}{b^4}}$

$\frac{\sqrt{25}}{\sqrt{b^4}} = \frac{5}{b^2}$

Simplify (together)

$$\sqrt{\frac{88}{11}}$$

$$\sqrt{8}$$

$8 = 2 \cdot 2 \cdot 2$

$$2\sqrt{2}$$

$$\sqrt{\frac{12a^3}{27a}}$$

$$\sqrt{\frac{4a^2}{9}} = \frac{\sqrt{4a^2}}{\sqrt{9}} = \frac{2a}{3}$$

Rationalize the denominator.

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

$$\sqrt{5 \cdot 5}$$

$$\sqrt{25}$$

$$5$$

$$\frac{\sqrt{7}}{\sqrt{8n}} \cdot \frac{\sqrt{8n}}{\sqrt{8n}} = \frac{\sqrt{56n}}{8n}$$

$$= \frac{2\sqrt{14n}}{8n}$$

$$= \frac{\sqrt{14n}}{4n}$$

Rationalize.

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

$$\sqrt{3}$$

$$\sqrt{3 \cdot 3}$$

$$\sqrt{9}$$

$$3$$

$$\frac{\sqrt{5}}{\sqrt{18t}} \cdot \frac{\sqrt{18t}}{\sqrt{18t}} = \frac{\sqrt{90t}}{18t}$$

90

9 10

3 3 2 5

$$\frac{3\sqrt{10t}}{18t}$$

$$\frac{\sqrt{10t}}{6t}$$

HW: 11-1 Book pg. 619 #6-~~20~~ 16 evens and #28-~~42~~ 38 evens