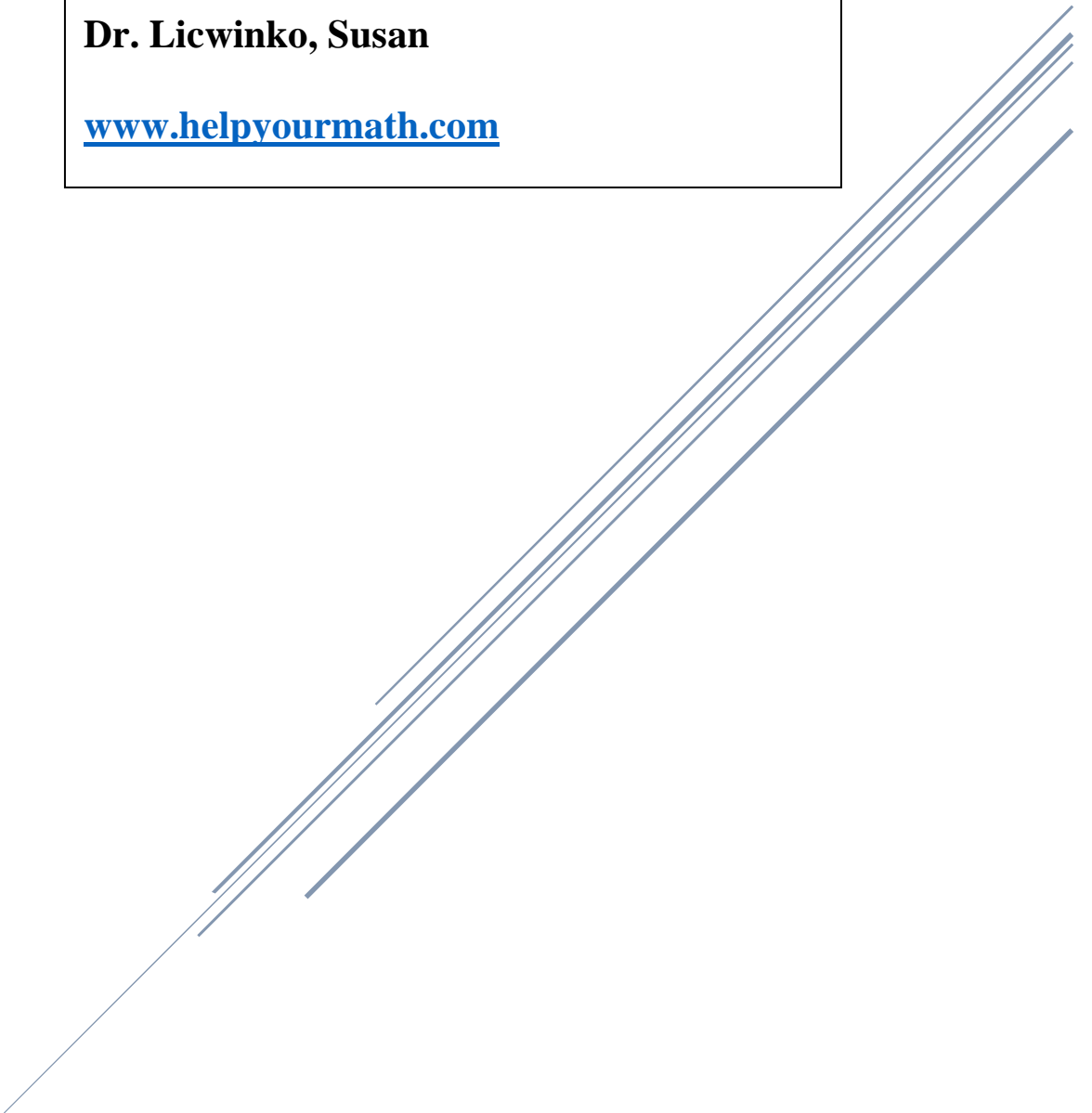


## Chapter 3 Notes

### **Simplifying and Combining Radical Expressions**

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[www.helpyourmath.com](http://www.helpyourmath.com)



Sections and videos:

Section 3.1 playlist:

<https://www.youtube.com/playlist?list=PLDP6hC4Qvja1Tlu1aqif9htmRzTHFMo60>

Section 3.2 playlist:

<https://www.youtube.com/playlist?list=PLDP6hC4Qvja3ajWXEC7Rt9asq2CT1YFSv>

Sections 3.3 and 3.4 playlist:

[https://www.youtube.com/playlist?list=PLDP6hC4Qvja3e9wNV\\_-tnc2OwBcEir-PO](https://www.youtube.com/playlist?list=PLDP6hC4Qvja3e9wNV_-tnc2OwBcEir-PO)

Sections 3.5 and 3.6 playlist:

<https://www.youtube.com/playlist?list=PLDP6hC4Qvja2zQscUkhtd4AXBWliLAGc7>

Section 3.7 playlist:

<https://www.youtube.com/playlist?list=PLDP6hC4Qvja1gTULGy-VCOesrzhwNa01A>

## Section 3.3. Simplified Form for Radicals

1.) When is a radical expression in simplified form?

2.) Write each expression in simplified radical form.

a)  $\sqrt{8}$

b)  $\sqrt{50}$

c)  $-\sqrt{72}$

d)  $\sqrt[3]{16}$

e)  $-\sqrt[3]{54}$

f)  $\sqrt[3]{-128}$

g)  $\sqrt[4]{80}$

h)  $\sqrt[5]{-486}$

i)  $\sqrt[3]{-\frac{108}{125}}$

Assume all variables represent nonnegative real numbers.

$$\text{j) } \frac{\sqrt[3]{-0.064}}{2}$$

$$\text{k) } \sqrt[3]{24a^3b^2c^5}$$

$$\text{l) } \sqrt{24a^3b^2c^5}$$

$$\text{m) } \sqrt{32a^7b^{10}c^3}$$

$$\text{n) } -\sqrt[5]{32a^7b^{10}c^3}$$

$$\text{o) } 2a\sqrt[4]{32a^7b^{10}c^3}$$

## Section 3.4. Addition and Subtraction of Radical Expressions

1.) What are like radical expressions?

2.) Add or subtract the radical expressions, if possible.

a)  $3\sqrt{7} - 8\sqrt{7}$

b)  $5b\sqrt{a} + 3b\sqrt{a}$

c)  $6x\sqrt{10} - \sqrt{10x^2}$

d)  $6\sqrt[3]{4} - 11\sqrt[3]{32} + 7\sqrt[3]{4}$

e)  $\sqrt[5]{3b} + \sqrt[3]{3b}$

f)  $-15\sqrt[3]{81} + 3\sqrt[3]{24}$

2. Add or subtract the radical expressions, if possible.

a)  $3a^2\sqrt{80ab^3} - 5b\sqrt{45a^5b}$

b)  $5x^4\sqrt{32} - 2^4\sqrt{162}$

c)  $7^3\sqrt{375w^4} - 4w^3\sqrt{81w} - w^3\sqrt{24w}$

d)  $3mn^3\sqrt[4]{405m^5n^2} - 2\sqrt[4]{80m^9n^{14}}$