

Name _____

Date _____

8A: Algebra 1

Period _____

Multiplying & Dividing RadicalsMultiplying Radicals

I. Steps:

1) Multiply the _____ & write as a new _____

2) Multiply the _____ & write as a new _____

3) Express your answer in simplest radical form.

*numbers outside the radical can't be multiplied by numbers inside the radical

II. Examples: Express the product in simplest radical form

1) $\sqrt{5} \cdot \sqrt{10}$	2) $\sqrt{8} \cdot \sqrt{5}$	3) $\sqrt{6} \cdot \sqrt{3}$
4) $7\sqrt{3} \cdot \sqrt{12}$	5) $4\sqrt{2} \cdot 5\sqrt{3}$	6) $\frac{2}{3}\sqrt{24} \cdot 9\sqrt{3}$
7) $(5\sqrt{8})(7\sqrt{3})$	8) $(\sqrt{5})^2$	9) $(2\sqrt{3})^2$
10) $2\sqrt{2y^3} \cdot 5\sqrt{32y}$	11) $-\frac{1}{10}\sqrt{3x^5} \cdot 70\sqrt{6x^2}$	12) $\frac{4}{7}\sqrt{28z^3} \cdot 21\sqrt{7z^2}$

Dividing Radicals

III. Steps:

- 1) Divide the _____ & write as a new _____
- 2) Divide the _____ & write as a new _____
- 3) Express your answer in simplest radical form.

*numbers outside the radical can't be divided by numbers inside the radical

*If the division is not rational, simplify then divide

IV. Examples: Express the product in simplest radical form

1) $\sqrt{27} \div \sqrt{3}$	2) $\sqrt{125} \div \sqrt{5}$	3) $\sqrt{24} \div \sqrt{2}$
4) $\frac{20\sqrt{50}}{5\sqrt{2}}$	5) $\frac{2\sqrt{40}}{\sqrt{5}}$	6) $\frac{35\sqrt{54}}{5\sqrt{3}}$
7) $\frac{6\sqrt{24}}{\sqrt{32}}$	8) $\frac{2\sqrt{63}}{\sqrt{28}}$	9) $\frac{3\sqrt{80}}{\sqrt{45}}$
10) $\sqrt{45x^7} \div \sqrt{5x^4}$	11) $-2\sqrt{\frac{80x^5y^{10}}{10x^3y^6}}$	12) $6\sqrt{\frac{300x^6y^8}{100x^4y^2}}$