**Algebra 1 – Unit 8**
**Operations with Radical Expressions NOTES**

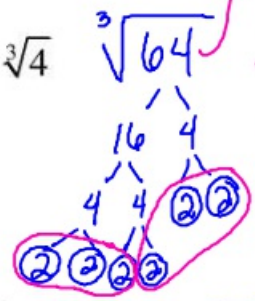
- **Multiplying**

To multiply radical expressions.

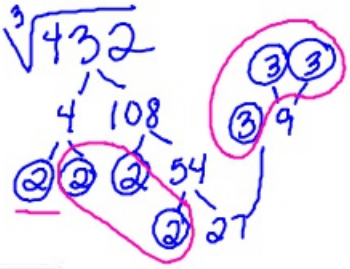
- Only the index needs to be the same
- Multiply the radicands together; multiply the numbers outside of the radicals together
- Simplify the radical expression

$\sqrt{18}\cdot\sqrt{27}$ $\sqrt{486}$ $3\cdot3\sqrt{2\cdot3}$ $9\sqrt{6}$


$\sqrt[3]{16}\cdot\sqrt[3]{4}$ $\sqrt[3]{64}$ perfect cube! $2\cdot2\sqrt[3]{}$ $4$




$\sqrt[3]{108}\cdot\sqrt[3]{4}$ $\sqrt[3]{432}$ $2\cdot3\sqrt[3]{2}$ $6\sqrt[3]{2}$

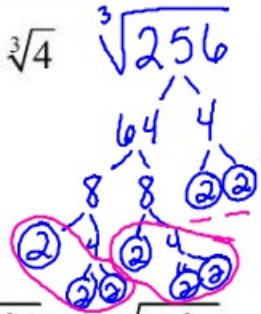



$3\sqrt{x^5}\cdot3\sqrt{x^1}$ $9\sqrt{x^6}$ $xxxxxx$ $9xxx\sqrt{}$ $9x^3$

$\sqrt{x^2yz^3}\cdot\sqrt{x^3z^5}$ $xx\sqrt{xy}$ $zzzz$ $x^2z^4\sqrt{xy}$

$\sqrt{x^5yz^8}$ $xxxxx$ $y$ $zzzz$ $zzzz$

$\sqrt[3]{64}\cdot\sqrt[3]{4}$ $\sqrt[3]{256}$ $2\cdot2\sqrt[3]{2\cdot2}$ $4\sqrt[3]{4}$




$2\sqrt[3]{16}\cdot5\sqrt[3]{8}$ $10\sqrt[3]{128}$ $2\cdot2\cdot10\sqrt[3]{2}$ $40\sqrt[3]{2}$


$x\sqrt{5x^3y}\cdot7x\sqrt{4x^2y}$

$7x^2\sqrt{20x^5y^2}$ $yy$ $xxxx$


$2\cdot x\cdot x\cdot y\cdot7x^2\sqrt{5x}$ $14x^4y\sqrt{5x}$