

## radical review

Identify and define all parts of the radical, then simplify:

$$5\sqrt[3]{8}$$

## Ex1 – Simplify

a)  $\sqrt{8}$     b)  $\sqrt{27}$     c)  $\sqrt{52}$     d)  $\sqrt[3]{24}$     e)  $\sqrt[3]{81}$     f)  $\sqrt[4]{32}$

radicand index ↓	x	x <sup>2</sup>	x <sup>3</sup>	x <sup>4</sup>	x <sup>5</sup>	x <sup>6</sup>	x <sup>7</sup>	x <sup>8</sup>	x <sup>9</sup>
2	$\sqrt{x}$	$\sqrt{x^2}$							
3	$\sqrt[3]{x}$								
4	$\sqrt[4]{x}$								
5									

## Ex2 – Simplify

a)  $\sqrt{18x^3y^6}$     b)  $\sqrt{63n^7p^4}$     c)  $\sqrt{32x^8y^{11}}$     d)  $\sqrt[3]{40a^4b^8c^{15}}$

e)  $\sqrt[3]{54a^5b^{10}}$

f)  $\sqrt[4]{m^7}$

g)  $\sqrt[4]{162x^3y^{11}z^5}$

Ex3 – Change  
to entire

a)  $4\sqrt{3}$

b)  $3\sqrt{5}$

c)  $2\sqrt[3]{7}$

d)  $2x\sqrt{6x}$

e)  $x^3\sqrt{x}$

f)  $2k^2(\sqrt[3]{4k})$

g)  $3a^2b\sqrt[3]{b^2c}$

Like Radicals

'Like Radicals' are radicals with...

Simplify  $3\sqrt{2} + 2\sqrt{2}$

Steps for adding & subtracting like radicals:

Ex1 - Simplify

a)  $7\sqrt{3} - 2\sqrt{3}$

b)  $-5\sqrt[3]{10} - 6\sqrt[3]{10}$

c)  $2\sqrt{75} + 3\sqrt{3}$

e)  $-\sqrt{27} + 3\sqrt{5} - \sqrt{80} - 2\sqrt{12}$

f)  $\sqrt{9b} - 3\sqrt{16b}, b \geq 0$