

PC  
1  
8  
27  
64  
125

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Date \_\_\_\_\_  
Pre Calculus

## Reducing Cubed Roots

Reduce the following radicals into simplest form

1.  $\sqrt[3]{64}$

4

2.  $\sqrt[3]{16}$

$\sqrt[3]{8} \sqrt[3]{2}$   
 $2\sqrt[3]{2}$

3.  $2\sqrt[3]{250}$

$2\sqrt[3]{125} \sqrt[3]{2}$   
 $2(5)\sqrt[3]{2}$   
 $10\sqrt[3]{2}$

4.  $3\sqrt[3]{108}$

$3\sqrt[3]{27} \sqrt[3]{4}$   
 $3(3)\sqrt[3]{4}$   
 $9\sqrt[3]{4}$

5.  $2\sqrt[3]{135}$

$2\sqrt[3]{27} \sqrt[3]{5}$   
 $2(3)\sqrt[3]{5}$   
 $6\sqrt[3]{5}$

6.  $5\sqrt[3]{384}$

$5\sqrt[3]{64} \sqrt[3]{6}$   
 $5(4)\sqrt[3]{6}$   
 $20\sqrt[3]{6}$

7.  $-2\sqrt[3]{72}$

$-2\sqrt[3]{8} \sqrt[3]{9}$   
 $-2(2)\sqrt[3]{9}$   
 $-4\sqrt[3]{9}$

8.  $3\sqrt[3]{375}$

$3\sqrt[3]{125} \sqrt[3]{3}$   
 $3(5)\sqrt[3]{3}$   
 $15\sqrt[3]{3}$

$$9. 3x\sqrt[3]{128x^6y^5z^{11}}$$

$$3x\sqrt[3]{64x^6y^3z^9}\sqrt[3]{2y^2z^2}$$

$$3x(4x^2yz^3)\sqrt[3]{2y^2z^2}$$

$$12x^3yz^3\sqrt[3]{2y^2z^2}$$

$$10. 2x^2yz\sqrt[3]{125x^4y^5z^6}$$

$$2x^2yz\sqrt[3]{125x^3y^3z^6}\sqrt[3]{xy^2}$$

$$2x^2yz(5xyz^2)\sqrt[3]{xy^2}$$

$$10x^3y^2z^3\sqrt[3]{xy^2}$$

$$11. 4ab\sqrt[3]{500a^9b^6c^{13}}$$

$$4ab\sqrt[3]{125a^9b^6c^{12}}\sqrt[3]{4c}$$

$$4ab(5a^3b^2c^4)\sqrt[3]{4c}$$

$$20a^4b^3c^4\sqrt[3]{4c}$$

$$12. 4z\sqrt[3]{54x^7y^3z^5}$$

$$4z\sqrt[3]{27x^6y^3z^3}\sqrt[3]{2xz^2}$$

$$4z(3x^2yz)\sqrt[3]{2xz^2}$$

$$12x^2yz^2\sqrt[3]{2xz^2}$$

$$13. abc\sqrt[3]{64a^5b^{15}c^2}$$

$$abc\sqrt[3]{16a^3b^{15}}\sqrt[3]{4a^2c^2}$$

$$abc(4ab^5)\sqrt[3]{4a^2c^2}$$

$$4a^2b^6c\sqrt[3]{4a^2c^2}$$

$$14. -3x^2z\sqrt[3]{270x^8y^{14}z^{19}}$$

$$-3x^2z\sqrt[3]{27x^6y^{12}z^{18}}\sqrt[3]{10x^2y^2z}$$

$$-3x^2z(3x^2y^4z^6)\sqrt[3]{10x^2y^2z}$$

$$-9x^4y^4z^7\sqrt[3]{10x^2y^2z}$$