

Simplify the expression, in simplest radical form.

1.)  $\sqrt[3]{125y^6}$   
 $5y^2$

2.)  $(9x^2y^{10})^{\frac{1}{2}}$   
 $\sqrt[2]{9x^2y^{10}}$   
 $3x^1y^5$

3.)  $\sqrt[3]{25x^5} \cdot \sqrt{x}$   
 $5x^2\sqrt{x}$

4.)  $\sqrt[3]{64a^{16}}$   
 $4a^5\sqrt[3]{a}$   
*Do not forget*

5.)  $\sqrt[3]{25x^4y^7} = 5x^2y^3\sqrt{y}$

6.)  $\sqrt[5]{6x^5y^{13}} = xy^2\sqrt[5]{6y^3}$

7.)  $\sqrt{-50} = \sqrt{-25 \cdot 2}$   
 $= 5i\sqrt{2}$

8.)  $\sqrt[3]{-54} = \sqrt[3]{-27 \cdot 2}$   
 $= -3\sqrt[3]{2}$

Simplify the expression, in simplest rational form.

9.)  $(8x^2)^{\frac{2}{3}}$

$$8^{\frac{2}{3}} \times x^{\frac{4}{3}}$$

$$\sqrt[3]{8^2} \times x^{\frac{4}{3}}$$

$$2^2 \times x^{\frac{4}{3}}$$

$$\boxed{4x^{\frac{4}{3}}}$$

10.)  $(16xy^2)^{\frac{3}{4}}$

$$16^{\frac{3}{4}} \times x^{\frac{3}{4}} \times y^{\frac{6}{4}}$$

$$\sqrt[4]{16^3} \times x^{\frac{3}{4}} \times y^{\frac{3}{2}}$$

$$2^3 \times x^{\frac{3}{4}} \times y^{\frac{3}{2}}$$

$$\boxed{8x^{\frac{3}{4}}y^{\frac{3}{2}}}$$

11.) The expression  $\sqrt[4]{81x^2y^5}$  is equivalent to

$$3x^{\frac{1}{2}}y^{\frac{5}{4}}$$

(a)  $3x^{\frac{1}{2}}y^{\frac{5}{4}}$

(b)  $3x^{\frac{1}{2}}y^{\frac{4}{5}}$

(c)  $9xy^{\frac{5}{2}}$

(d)  $9xy^{\frac{2}{5}}$

12.) The expression  $\sqrt[3]{3x^2y}$  is equivalent to

$$(3x^2y)^{\frac{1}{3}} = 3^{\frac{1}{3}} \times x^{\frac{2}{3}} \times y^{\frac{1}{3}}$$

(a)  $3xy^{\frac{1}{2}}$

(b)  $3^{\frac{1}{3}}x^{\frac{2}{3}}y^{\frac{1}{3}}$

(c)  $3xy$

(d)  $3^{\frac{1}{2}}xy$