Name: KEY Class: _____ Date: _____ ID: B

## Quiz 6.1 - 6.2 (Practice)

1. Rewrite $7^{1/5}$ using radical notation. $\sqrt[5]{7}$

**Evaluate:**

2. $81^{3/4}$ $\left(\sqrt[4]{81}\right)^3 = 3^3 = 27$

3. Which is $\sqrt[3]{24}$ written in simplest form?
   a. $2\sqrt[3]{6}$
   b. $3\sqrt[3]{2}$
   c. $2\sqrt[3]{3}$
   d. $4\sqrt[3]{6}$

$\sqrt[3]{24} = \sqrt[3]{8} \cdot \sqrt[3]{3}$
$= 2\sqrt[3]{3}$

**Simplify:**

4. $\sqrt{12} + \sqrt{48} = \sqrt{4}\sqrt{3} + \sqrt{16}\sqrt{3}$
   a. $3\sqrt{6}$
   b. $24\sqrt{3}$
   c. $\sqrt{60}$
   d. $6\sqrt{3}$

$2\sqrt{3} + 4\sqrt{3}$
$= 6\sqrt{3}$

5. $5\sqrt{2} + 7\sqrt{2} - 4\sqrt{2} = 8\sqrt{2}$
   a. $16\sqrt{2}$
   b. $\sqrt{16}$
   c. 16
   d. $8\sqrt{2}$

**Write the expression in simplest form.**

6. $\sqrt[3]{\frac{1}{5}}$ $\frac{1}{\sqrt[3]{5}} \cdot \frac{\sqrt[3]{5^2}}{\sqrt[3]{5^2}} = \frac{\sqrt[3]{25}}{5}$

7. $\sqrt[3]{54} = \sqrt[3]{27} \cdot \sqrt[3]{2} = 3\sqrt[3]{2}$

**Simplify the expression. Write your answer using only positive exponents.**

8. $\sqrt[3]{x^6y^{30}}$ $= x^2y^{10}$

9. Rewrite $11^{1/4}$ using radical notation. $\sqrt[4]{11}$

**Simplify:**

10. $\sqrt{64x^{12}} = 8x^6$

**Simplify:**

11. $\frac{25^{1/6}}{25^{2/3}}$ $= 25^{\frac{1}{6}-\frac{2}{3}} = 25^{\frac{1}{6}-\frac{4}{6}} = 25^{-\frac{3}{6}}$
$= 25^{-\frac{1}{2}} = \frac{1}{25^{\frac{1}{2}}}$
$= \frac{1}{\sqrt{25}} = \frac{1}{5}$

12. Which is equivalent to $81^{-1/4}$?
   a. 9
   b. 3
   c. $\frac{1}{9}$
   d. $\frac{1}{3}$

$\frac{1}{81^{\frac{1}{4}}} = \frac{1}{\sqrt[4]{81}} = \frac{1}{3}$

**Simplify:**

13. $\sqrt[3]{40} \cdot 4\sqrt[3]{5} = \sqrt[3]{8} \cdot \sqrt[3]{5} \cdot 4\sqrt[3]{5}$
$= 2\sqrt[3]{5} \cdot 4\sqrt[3]{5}$
$= 8\sqrt[3]{25}$

14. Simplify $8^{4/3}$.
   a. 8
   b. $\frac{32}{3}$
   c. $\frac{1}{2}$
   d. 16

$= \left(\sqrt[3]{8}\right)^4$
$= 2^4$
$= 16$

15. Rewrite $18^{1/6}$ using radical notation.

$\sqrt[6]{18}$