

## Math 2 Unit 3.7 Practice Radical form and Exponential form

Period \_\_\_\_\_

**Write each expression in radical form.**

1)  $5^{\frac{7}{4}}$

$(\sqrt[4]{5})^7$

2)  $5^{\frac{5}{3}}$

$(\sqrt[3]{5})^5$

3)  $6^{\frac{1}{3}}$

$\sqrt[3]{6}$

4)  $10^{\frac{1}{3}}$

$\sqrt[3]{10}$

5)  $(5k)^{\frac{1}{2}}$

$\sqrt{5k}$

6)  $x^{-\frac{1}{4}}$

$\frac{1}{\sqrt[4]{x}}$

7)  $(6p)^{\frac{1}{2}}$

$\sqrt{6p}$

8)  $(10n)^{\frac{2}{3}}$

$(\sqrt[3]{10n})^2$

**Write each expression in exponential form. Write with a negative exponent as needed.**

9)  $\sqrt[6]{10}$

$10^{\frac{1}{6}}$

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

$3^{\frac{3}{5}}$

11)  $(\sqrt[3]{4m})^2$

$(4m)^{\frac{2}{3}}$

12)  $\frac{1}{\sqrt[3]{7x^2}}$

$(7x^2)^{-\frac{1}{3}}$

13)  $(\sqrt[3]{7n})^4$

$(7n)^{\frac{4}{3}}$

14)  $\sqrt[3]{7x^2}$

$(7x^2)^{\frac{1}{3}}$

Solve each equation.

$$15) 2 = n^{\frac{1}{3}}$$

{8}

$$16) x^{\frac{3}{2}} = 343$$

{49}

$$17) n^{\frac{5}{3}} = 243$$

{27}

$$18) 64 = a^{\frac{3}{2}}$$

{16}

$$19) r^{\frac{3}{2}} = 729$$

{81}

$$20) 512 = x^{\frac{3}{2}}$$

{64}

$$21) 720 = -9 + m^{\frac{3}{2}}$$

{81}

$$22) 59 = (x - 15)^{\frac{6}{5}} - 5$$

{47}

$$23) 125 = (-23 - 2m)^{\frac{3}{2}}$$

{-24}

$$24) -2x^{\frac{3}{2}} = -1024$$

{64}

$$25) (x + 1)^{\frac{3}{2}} = 8$$

{3}

$$26) 128 = 3 + k^{\frac{3}{2}}$$

{25}

$$27) 3 + 4 \cdot \left(\frac{x}{7}\right)^{\frac{1}{4}} = 11$$

{112}

$$28) 728 = (-3 - 3m)^{\frac{3}{2}} - 1$$

{-28}

$$29) 4 - 5 \cdot (4a)^{\frac{1}{5}} = -6$$

{8}

$$30) -2(4m - 8)^{\frac{3}{2}} + 8 = -424$$

{11}