

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

Review– Radicals – Part 1

Simplify.

1.  $\sqrt[3]{32} + \sqrt[3]{108}$

\_\_\_\_\_

2.  $\sqrt[5]{-64x^{12}y^8}$

\_\_\_\_\_

3.  $\frac{\sqrt{27x^7}}{\sqrt{3x^3}}$

\_\_\_\_\_

4.  $\sqrt{200} - 3\sqrt{32} + 2\sqrt{98}$

\_\_\_\_\_

5.  $\sqrt[5]{16x^2y^6} \cdot \sqrt[5]{2x^8y^4}$

\_\_\_\_\_

6.  $\sqrt[3]{24x^5y^4}$

\_\_\_\_\_

7.  $\sqrt{\frac{3}{7}}$

\_\_\_\_\_

8.  $\frac{4}{\sqrt{2}}$

\_\_\_\_\_

9.  $\frac{1}{\sqrt{3}}$

\_\_\_\_\_

**Rewrite each expression using rational exponents.**

10.  $\sqrt[3]{2a} =$  \_\_\_\_\_

**Rewrite each expression using radical notation.**

11.  $(5)^{3/4} =$  \_\_\_\_\_

**Evaluate.**

12.  $4^{3/2} =$  \_\_\_\_\_

13.  $125^{-2/3} =$  \_\_\_\_\_

14.  $27^{4/3} =$  \_\_\_\_\_

15.  $8^{-5/3} =$  \_\_\_\_\_

**Use the laws of exponents to simplify each expression. Write all answers with positive exponents.**

16.  $\left(\frac{64m^6}{27n^9}\right)^{2/3}$

\_\_\_\_\_

17.  $-2a^{-1/6}b^{5/6} \cdot 7a^{5/6}b^{-1/6}$

\_\_\_\_\_

18.  $\frac{-12x^{3/7}}{4x^{2/7}}$

\_\_\_\_\_

19.  $(16a^4b^8)^{1/2}$

\_\_\_\_\_

20.  $7^{3/4} \cdot 7^{5/4}$

\_\_\_\_\_

Solve each equation and check for extraneous solutions. SHOW WORK!!!

21.  $3(x+1)^{3/2} + 4 = 28$

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22.  $\sqrt[3]{2x-7} = 3$

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23.  $\sqrt{x+7} = x+1$

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Answers in random order:  $\frac{16m^4}{9n^6}$ ,  $4a^2b^4$ ,  $3x^2$ ,  $5\sqrt[3]{4}$ ,  $\frac{1}{32}$ ,  $12\sqrt{2}$ ,  $\frac{1}{25}$ ,  $2\sqrt{2}$ ,  $-14a^{2/3}b^{2/3}$ ,  $2x^2y^2$ ,  $\sqrt[4]{5^3}$ ,  $-3x^{1/7}$ ,  $2xy\sqrt[3]{3x^2y}$ ,  $\frac{\sqrt{21}}{7}$ ,  $(2a)^{1/3}$ ,  $\frac{\sqrt{3}}{3}$ ,  $-2x^2y\sqrt[5]{2x^2y^3}$ , 2, 3, 8, 17, 49, 81