Name_____ Date _____

6.2 Practice A

In Exercises 1 and 2, rewrite the expression in rational exponent form.

1. $\sqrt{7}$

2. $\sqrt[4]{13}$

In Exercises 3 and 4, rewrite the expression in radical form.

3. $14^{1/4}$

4. $117^{1/6}$

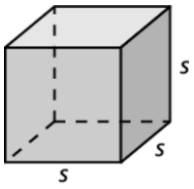
In Exercises 5 and 6, find the indicated real *n*th root(s) of *a*.

5. $n = 3, a = 27$

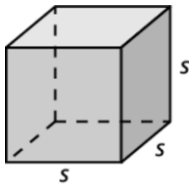
6. $n = 4, a = 16$

In Exercises 7 and 8, find the dimensions of the cube. Check your answer.

7. Volume $= 125 \text{ ft}^3$



8. Volume $= 343 \text{ m}^3$



In Exercises 9–11, evaluate the expression.

9. $\sqrt[3]{-125}$

10. $\sqrt[4]{81}$

11. $\sqrt[4]{-625}$

In Exercises 12 and 13, rewrite the expression in rational exponent form.

12. $\left(\sqrt[4]{14}\right)^3$

13. $\left(\sqrt[3]{-40}\right)^5$

In Exercises 14 and 15, rewrite the expression in radical form.

14. $10^{3/5}$

15. $(-3)^{6/5}$

In Exercises 16–18, evaluate the expression.

16. $81^{3/4}$

17. $25^{3/2}$

18. $(-27)^{2/3}$

19. The area of a square patio is 49^3 square inches. Find the length of one side of the patio.

Name _____ Date _____

6.2 Practice B

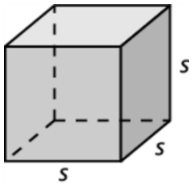
In Exercises 1 and 2, find the indicated *n*th root(s) of *a*.

1. $n = 6, a = 64$

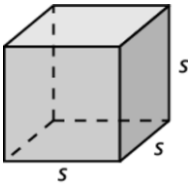
2. $n = 5, a = 243$

In Exercises 3 and 4, find the dimensions of the cube. Check your answer.

3. Volume $= 729 \text{ cm}^3$



4. Volume $= 1000 \text{ yd}^3$



In Exercises 5–7, evaluate the expression.

5. $-\sqrt[3]{-512}$

6. $729^{1/6}$

7. $(-625)^{1/4}$

In Exercises 8 and 9, rewrite the expression in rational exponent form.

8. $\left(\sqrt[5]{-53}\right)^4$

9. $\left(\sqrt[4]{110}\right)^7$

In Exercises 10 and 11, rewrite the expression in radical form.

10. $(-34)^{4/9}$

11. $41^{7/4}$

In Exercises 12–17, evaluate the expression.

12. $(-128)^{3/7}$

13. $(-25)^{5/2}$

14. $1000^{4/3}$

15. $\left(\frac{1}{125}\right)^{2/3}$

16. $(343)^{-1/3}$

17. $\left(\frac{1}{64}\right)^{3/2}$

18. The radius of a sphere is given by the equation $r = \left(\frac{3V}{4\pi}\right)^{1/3}$, where V is the volume of the sphere. Find the radius, to the nearest centimeter, of a sphere that has a volume of 268 cubic centimeters. Use 3.14 for π.

19. Use the formula $r = \left(\frac{F}{P}\right)^{1/n} - 1$ to find the annual inflation rate to the nearest tenth of a percent. A rare coin increases in value from \$0.25 to \$1.50 over a period of 30 years.