## **Lesson 4 Practice Problems**

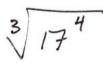
1. Evaluate 
$$8^{\frac{5}{3}}$$
. =  $(3\sqrt{8})^{\frac{5}{2}}$  =  $2^{\frac{5}{2}}$  =  $3 \ge$ 

2. Select **all** expressions that are equal to  $64^{\frac{3}{2}}$ . = (2/64)3 = 83 = 512

$$(E.)\sqrt{64^3}$$

F. 
$$\sqrt[3]{64}^2$$

3. Write the expression  $17^{\frac{4}{3}}$  using radicals.



4. An arithmetic sequence k starts 4, 13, . . . . Explain how you would calculate the value of the 5,000th term.

(From Unit 1, Lesson 8.)



- 5. Select **all** items equivalent to  $\sqrt{24}$ .
  - A. the area of a square with side length 24 units  $\, m{\mathcal{X}} \,$
  - B. the side length of a square with area 24 square units
  - C. the positive number x, where  $x \cdot x = 24$
  - D. the positive number y, where  $y = 24 \cdot 24 \times$
  - E. the edge length of a cube with volume 24 cubic units  $\, m{\chi} \,$
  - F. the volume of a cube with edge length 24 units  $\, \, {m \chi} \,$

(From Unit 3, Lesson 2.)

- 6. Which expression is equivalent to  $23^{\frac{1}{2}}$ ?
  - A.  $\frac{1}{23}$
  - B.  $\frac{1}{\sqrt{23}}$
  - C. 11.5
  - $\int D.\sqrt{23}$

(From Unit 3, Lesson 3.)



## **Lesson 5 Practice Problems**

1. Write each expression in the form  $a^b$ , without using any radicals.

a. 
$$\sqrt{5^9} = 5^{\frac{9}{2}}$$

b. 
$$\frac{1}{\sqrt[3]{12}} = \frac{1}{2} - \frac{1}{3}$$

2. Write  $32^{-\frac{2}{5}}$  without using exponents or radicals.

$$=\frac{1}{(\sqrt[3]{32})^2}=\frac{1}{2^2}=\frac{4}{4}$$

3. Match the equivalent expressions.

B. 
$$8^{-\frac{1}{3}}$$
 3.  $\frac{1}{2}$ 

D. 
$$16^{\frac{1}{2}}$$
 6. 4

4. Complete the table. Use powers of 27 in the top row and radicals or rational numbers in the bottom row.

27 <sup>1</sup>	272	$27^{\frac{1}{3}}$	27°	$27^{-\frac{1}{2}}$	27
27	$\sqrt{27}$	3/27	1	/57	1/3

(From Unit 3, Lesson 3.)

5. What are the solutions to the equation 
$$(x - 1)(x + 2) = -2$$
?

$$\begin{array}{lll}
\cos (x-1)(x+2) = -2? & (0-1)(0+2) = -2 \\
\chi^2 + \chi - 2 = -2 & (-1)(-1)(-1)+2 = -2 \\
\chi^2 + \chi^2 = 0 & (-2)(1) = -2 \\
\chi(\pi+1) = 0 & (-2)(1) = -2
\end{array}$$

$$\chi(5)^3 = \sqrt{5}^3$$

(From Unit 2, Lesson 11.)

6. Use exponent rules to explain why  $(\sqrt{5})^3 = \sqrt{5^3}$ .

(From Unit 3, Lesson 4.) 
$$(\sqrt{5})^3 = 5^{\frac{3}{2}} = (5^3)^{\frac{1}{2}} = \sqrt{5^3}$$