

## Lesson 5 Practice Problems

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

a.  $\sqrt{5^9}$

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

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

3. Match the equivalent expressions.

A.  $8^{\frac{1}{3}}$

1.  $\frac{1}{8}$

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

2.  $\frac{1}{4}$

C.  $8^{-1}$

3.  $\frac{1}{2}$

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

4. 1

E.  $16^{-\frac{1}{2}}$

5. 2

F.  $16^0$

6. 4

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

|        |             |                    |   |                     |               |
|--------|-------------|--------------------|---|---------------------|---------------|
| $27^1$ |             | $27^{\frac{1}{3}}$ |   | $27^{-\frac{1}{2}}$ |               |
| 27     | $\sqrt{27}$ |                    | 1 |                     | $\frac{1}{3}$ |

(From Unit 3, Lesson 3.)

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

(From Unit 2, Lesson 11.)

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

(From Unit 3, Lesson 4.)