Lesson 3 Practice Problems

1. Complete the table. Use powers of 64 in the top row and radicals or rational numbers in the bottom row.

64^1	$64^{\frac{1}{2}}$		64^0		64^{-1}
64		4		$\frac{1}{8}$	

2. Suppose that a friend missed class and never learned what $25^{\frac{1}{2}}$ means.

   a. Use exponent rules your friend would already know to calculate $25^{\frac{1}{2}} \cdot 25^{\frac{1}{2}}$.

   b. Explain why this means that $25^{\frac{1}{2}} = 5$.

3. Which expression is equivalent to $16^{\frac{1}{2}}$?

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

   B. 4

   C. 8

   D. 16.5

4. Select **all** the expressions equivalent to 4^{10}.

   A. $2^5 \cdot 2^2$

   B. 2^{20}

   C. $4^4 \cdot 4^6$

   D. $4^7 \cdot 4^{-3}$

   E. $\frac{4^4}{4^{-6}}$

   (From Unit 3, Lesson 1.)

5. The table shows the edge length and volume of several different cubes. Complete the table using exact values.

edge length (ft)	3			$\sqrt[3]{100}$		$\sqrt[3]{147}$
volume (ft^3)		64	85		125	

   (From Unit 3, Lesson 2.)

6. A square has side length $\sqrt{82}$ cm. What is the area of the square?

   A. 9.05 cm^2

   B. 82 cm^2

   C. 164 cm^2

   D. 6724 cm^2

   (From Unit 3, Lesson 2.)