### 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
 | *
 | * $\frac{1}{8}$
 | *
 |

1. Suppose that a friend missed class and never learned what $25^{\frac{1}{2}}$ means.
	1. Use exponent rules your friend would already know to calculate $25^{\frac{1}{2}}⋅25^{\frac{1}{2}}$.
	2. Explain why this means that $25^{\frac{1}{2}}=5$.
2. Which expression is equivalent to $16^{\frac{1}{2}}$?
	1. $\frac{1}{4}$
	2. 4
	3. 8
	4. 16.5
3. Select **all** the expressions equivalent to $4^{10}$.
	1. $2^{5}⋅2^{2}$
	2. $2^{20}$
	3. $4^{4}⋅4^{6}$
	4. $4^{7}⋅4^{-3}$
	5. $\frac{4^{4}}{4^{-6}}$
* (From Unit 3, Lesson 1.)
1. 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 (ft3)**
 | *
 | * 64
 | * 85
 | *
 | * 125
 | *
 |

* (From Unit 3, Lesson 2.)
1. A square has side length $\sqrt{82}$ cm. What is the area of the square?
	1. 9.05 cm2
	2. 82 cm2
	3. 164 cm2
	4. 6724 cm2
* (From Unit 3, Lesson 2.)



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