[redacted]

Course: [redacted]
Book: Tobey: Beginning and Intermediate Algebra, 4e

Assignment: Week 7: Homework 8.2

1. Explain why the cube root of a negative number is a negative number.

Choose the correct answer below.

- A. The cube root of any number is a negative number.
- B. The cube root of a negative number is equal to both the positive and negative of the solution.
- C. The cube root of a negative number is undefined.
- D. A negative number cubed is always equal to a negative number, so the cube root of a negative number will also always be negative.

2. Find the square root.

$\sqrt{64}$

Select the correct choice below and, if necessary, fill in the answer box within your choice.

- A. $\sqrt{64} =$ ☐
- B. The square root is not a real number.

3. Evaluate if possible.

$\sqrt{121} + \sqrt{16}$

Select the correct choice below and fill in any answer boxes in your choice.

- A. $\sqrt{121} + \sqrt{16} =$ ☐
  (Simplify your answer. Type an integer or decimal rounded to the nearest hundredth as needed.)
- B. The square root is not a real number.

4. Evaluate if possible.

$-\sqrt{\frac{1}{49}}$

Select the correct choice below and, if necessary, fill in any answer box to complete your choice.

- A. The answer is ☐. (Simplify your answer. Type an integer or a fraction.)
- B. The square root is not a real number.

5. Evaluate if possible.

$\sqrt{-9}$

Select the correct choice below and fill in any answer boxes in your choice.

A. The answer is [ ]. (Simplify your answer. Type an integer or a fraction.)

B. The square root is not a real number.

6. For the given function, find the indicated function values. Find the domain of the function.

$f(x) = \sqrt{3x+6}$, find $f(0), f(1), f(6), f(-2)$.

$f(0) =$ [ ] (Round to one decimal place as needed.)

$f(1) =$ [ ] (Round to one decimal place as needed.)

$f(6) =$ [ ] (Round to one decimal place as needed.)

$f(-2) =$ [ ] (Round to one decimal place as needed.)

The domain of f(x) is all real numbers x where [ ].
(Type an inequality in terms of x.)

7. Find the root.

$\sqrt[3]{64}$

Select the correct choice below and, if necessary, fill in the answer box within your choice.

A. The cube root is a real number. $\sqrt[3]{64} =$ [ ]

B. The cube root is not a real number.

8. Find the root that is a real number.

$\sqrt[3]{-216}$

Select the correct choice below and, if necessary, fill in the answer box within your choice.

A. The cube root is ☐.

B. The cube root is not a real number.

9. Evaluate if possible.

$\sqrt[6]{(3)^6}$

Select the correct choice below and, if necessary, fill in any answer box to complete your choice.

A. The root is not a real number.

B. The answer is ☐.

10. Rewrite with a rational exponent.

$\sqrt[3]{y}$

$\sqrt[3]{y} =$ ☐

(Simplify your answer.)

11. Assume the variable represents a positive real number. Replace the radical with a rational exponent.

$\sqrt[7]{x^4}$

$\sqrt[7]{x^4}$ expressed with a rational exponent is ☐.

12. Simplify. Assume that all variables represent positive numbers.

$\sqrt[3]{s^9t^{18}}$

The answer is ☐.

(Simplify your answer.)

13. Simplify. Assume that the variables represent positive real numbers.

$\sqrt{16x^{12}y^{30}}$

The answer is $\square$.

14. Write the expression in radical form. Assume that the variable represents a positive real number.

$c^{7/3}$

$c^{7/3} = \square$

(Do not simplify.)

15. Write the expression in radical form and then evaluate.

$49^{3/2}$

$49^{3/2} = \square$ (Simplify your answer.)

16. Simplify.

$(64x^9)^{-1/3}$

$(64x^9)^{-1/3} = \square$

(Simplify your answer. Use integers or fractions for any numbers in the expression. Use positive exponents only.)

17. Simplify. Assume that the variables represent any positive or negative real number.

$\sqrt[4]{a^{32}b^{16}}$

$\sqrt[4]{a^{32}b^{16}} = \square$

(Simplify your answer. Use integers or fractions for any numbers in the expression. Use positive exponents only.)

18. Simplify. Assume that the variables represent any real number.

$$\sqrt{9x^{28}y^{32}}$$

$\sqrt{9x^{28}y^{32}} =$ ☐

(Simplify your answer. Use integers or fractions for any numbers in the expression. Use positive exponents only.)