

## Unit 8 Module C Notes Sections 21.6 – 21.8, 22.1

View the PowerPoint, Videos, or Textbook for Module 8C.

Vocabulary **Fill in the blanks.**

- (Section 21.6) The \_\_\_\_\_ states that for any natural number  $n$ , if an equation  $a = b$  is true, then  $a^n = b^n$  is true.
- (Section 21.6) To solve radical equations:
  - \_\_\_\_\_ one of the radical terms.
  - Use the principle of powers.
  - If a \_\_\_\_\_ remains, perform steps (a.) and (b.) again.
  - \_\_\_\_\_ possible solutions.
- (Section 21.8) The number  $i =$  \_\_\_\_\_. The number  $i^2 =$  \_\_\_\_\_.
- (Section 21.8) A number in the form  $a + bi$  where  $a$  and  $b$  are real numbers is known as a \_\_\_\_\_.
- (section 22.1) The distance between any two points  $(x_1, y_1)$  and  $(x_2, y_2)$  is given by the formula  $d =$  \_\_\_\_\_.

Problems **Show ALL steps.**

- (Section 21.6) Solve.

a.  $x = \sqrt{x+5} + 1$

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

Name: \_\_\_\_\_

Instructor: \_\_\_\_\_

Date: \_\_\_\_\_

Class Time: \_\_\_\_\_

2. (Section 21.7) An HDTV whose screen measures 55 in. diagonally has a height of 27 in. What is its width? Round your answer to the nearest hundredth.

3. (Section 21.8) Express in terms of  $i$ .

a.  $\sqrt{-5}$

b.  $-\sqrt{-25}$

4. (Section 22.1) Find the distance between  $(-2,1)$  and  $(4,-1)$ . Give your answer as a simplified radical expression.