

- 5 (AM) Advanced Mastery 100%
- 4 (M) Mastery 93%
- 3 (VM) Vital Mastery 82%
- 2 (FM) Foundational Mastery 70%
- 1 (NYM) Not Yet Mastered 45%
- 0 (NA) No Attempt 0%

Name:	
Port	Date

## **Pre-Assessment**

IM2 – 1.2 (A – V1 Pre) Rewriting & Solving Rational Exponent & Radical Expressions

Standards & Skill Mastery						
Student Self-	Skills Assessed / Goals	Teacher Score				
Score						
	N.RN.2 – I can rewrite rat					
	equivalent forms, applyin					
Pre-Assessment Plan						
Check all that apply. To study for this		To maintain or improve my mastery, I will study by				
assessment, I will						
independently, rework this						
pre-assessment.						
complete all of my practice.						
watch tutorials online.						
study my notes until I understand						
them.						
<ul> <li>work through practice problems &amp; recheck answers.</li> </ul>						

## Key Terms, Formulas, & Notes

<u>Equivalent Expressions</u>  $\equiv$  expressions with equal values

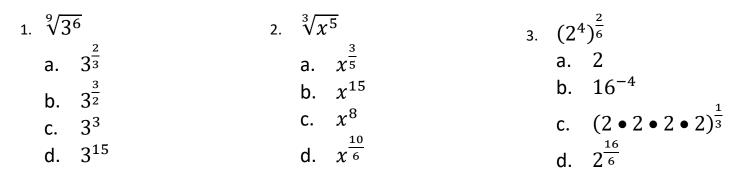
<u>Rational Exponent</u>  $\equiv$  an exponent that is a rational (fractional) number

<u>*Roots*</u>  $\equiv$  The root of a number x is another number, which when multiplied by itself a given number of times, equals x

## To Calculate the nth Root

- 1. Type the number for n (ex. 3)
- 2. Press 2nd
- 3. Press ^
- 4. Type a (ex. 125)
- 5. Enter

**Directions** - (N.RN.2) Select an expression that is equivalent to each radical below.



*Directions* – (N.RN.2) *Determine whether each expression is equivalent to the following rational expressions.* 

4. $\sqrt[7]{x^6}$			5. $(2x^3)^{\frac{2}{5}}$		
	Yes	No		Yes	No
$\chi^{\frac{7}{6}}$			$\sqrt[5]{4x^6}$		
$\sqrt{42x}$			$x\sqrt[5]{4}$		
$x^{\frac{6}{7}}$			$\sqrt[5]{2x^6}$		
$\left(\sqrt[7]{x}\right)^6$			$x\sqrt[5]{4x}$		
$(x^3)^{\frac{4}{14}}$			$\sqrt[5]{2 \bullet 2 \bullet xxxxxx}$		

**Directions** – (N.RN.2) Rewrite the following radical expression as a single rational expression (use product rule), then write at least 2 more equivalent forms.

6. 
$$\sqrt[4]{4^2} \bullet \sqrt[4]{4^3}$$

**Directions** – (N.RN.2) Rewrite the following rational exponent as a single radical expression (use quotient rule), then write at least 2 more equivalent forms.



*Directions* – (N.RN.2) *Simplify the following expression.* 

8.  $81^{\frac{1}{4}}(\sqrt[4]{81^2}+81^2)$ 

*Directions* – (N.RN.2) *Error Analysis: Circle the first mistake made in the student's work below. Then, rework the problem in the box below, showing all steps.* 

9. Given  $x^{3} = 25$ Step 1  $\sqrt[3]{x^{3}} = \sqrt[3]{25}$ Step 2  $x = 25^{\frac{1}{3}}$ Step 3  $x = (5^{2})^{\frac{1}{3}}$ Step 4  $x = \sqrt{5^{3}}$  Dor

$$= \sqrt[3]{25}$$

$$= \sqrt[3]{25}$$

$$25^{\frac{1}{3}}$$

$$(5^{2})^{\frac{1}{3}}$$

$$\sqrt{5^{3}} \text{ Done!}$$