Name: _____ Date: _____ Block: ____

Algebra 2 Honors- Week 16 Homework

Monday-

ID: 1

Algebra 2 Name_____

Rational Equations Assignment

Date_____ Period____

Solve each equation. Remember to check for extraneous solutions.

1) $\frac{1}{2m}+\frac{1}{6}=\frac{1}{m}$

2) $\frac{6n-1}{n^2}=\frac{1}{n}+\frac{1}{n^2}$

3) $\frac{1}{n+5}=\frac{6}{n}-\frac{5}{n+5}$

4) $\frac{n-4}{2n+10}=\frac{3n+3}{n+5}+\frac{1}{n+5}$

5) $\frac{1}{a}=\frac{a-2}{a}-\frac{6}{a^2-4a}$

6) $\frac{n-2}{n+5}=\frac{1}{n^2+11n+30}+\frac{n+1}{n+5}$

7) Bob and Glen can clean the whole house in 4 hours. If Bob can clean the house in 6 hours by himself, how long will it take just Glen?

8) Explain how you know if a rational equation has an extraneous solution.

Tuesday- Catch up on homework from last week and study for test tomorrow!

Practice Test for Rational Functions Unit

Learning Objectives:

A. Find the quotient of monomials.
B. Simplify expressions with negative exponents.
C. Graph rational functions using transformations.
D. Identify the asymptotes, domain, range and intercepts of a rational function.
E. Model a scenario using rational functions.
F. Simplify rational expressions.
G. Solve an equation with rational coefficients.
H. Solve rational equations.

Question #	Learning Objective	Know It	Feel Unsure		Right	Wrong	Simple Mistake	Need to Study
1	A							
2	B							
3	C							
4	D							
5	D							
6	E							
7	F							
8	H							
9	I							

1. $\frac{m^4}{4n^3}\cdot\left(\frac{2n}{m^3}\right)^3$

2. $\frac{(p^2q)^{-1}}{p^2q^{-1}}$

3. Graph: $f(x)=-\frac{1}{x+2}-3$

4. Identify the domain, range and intercepts of the function in #3.

5. Write a rational function that has no y-intercepts and exists only in the first and second quadrants.

6. To attend a power lifting class, you must pay $100 per year plus $3 per class.
   a) What is the average cost per class if you attend 10 classes?
   b) What is the average cost per class if you attend 50 classes?
   c) Write a function that find the average cost C give classes attended x.
   d) What is the domain of this function and what does it say about the scenario?
   e) Another power lifting class offers classes for $6 each with no annual fee. Is this a better deal? Explain your reasoning.

7. Simplify $\frac{y^2-4}{y^2+y-6}$

8. Solve: $\frac{x+1}{6} = x - \frac{3x-2}{4}$

9. Solve: $\frac{2}{x+2} + \frac{x^2}{x^2-4} = \frac{1}{x-2}$

Wednesday- Test Day! (No Homework)

Thursday-

Rational Exponents Assignment

Simplify.

1. $81^{\frac{1}{2}}$ 2. $27^{\frac{2}{3}}$ 3. $125^{-\frac{1}{3}}$ 4. $16^{\frac{3}{4}}$ 5. $-9^{\frac{3}{2}}$ 6. $25^{\frac{3}{2}}$

Rewrite in exponential form.

7. $\sqrt{x^5y^6}$ 8. $\sqrt[3]{x^5y^6}$ 9. $\sqrt[4]{16ab^6}$ 10. $\sqrt[3]{\frac{x^2y^7}{z^3}}$

Express in simplest radical form.

11. $\sqrt[3]{4} \cdot \sqrt[3]{4}$ 12. $\sqrt{8} \cdot \sqrt[6]{8}$ 13. $\frac{\sqrt[3]{4}}{\sqrt[6]{2}}$ 14. $\sqrt[10]{32} \div \sqrt[8]{4}$

15. Determine which two expressions are not equivalent to $\sqrt[3]{\frac{2^4}{4^6}}$. Explain how you know.

a) $\frac{2^{\frac{4}{3}}}{4^{\frac{6}{3}}}$ b) $2^{\frac{4}{3}} \cdot 2^{\frac{12}{3}}$ c) $2^{-\frac{8}{3}}$ d) $\frac{1}{2^{\frac{6}{3}} \cdot 2^{\frac{2}{3}}}$ e) $\frac{1}{4\sqrt{8}}$

Friday-

Real Number Exponents Assignment

Simplify.

1. $3^{\sqrt{2}} \cdot 3^{\sqrt{2}}$ 2. $\left(3^{\sqrt{2}}\right)^2$ 3. $\left(3^{\sqrt{2}}\right)^{\sqrt{2}}$ 4. $(10^2)^{\pi}$ 5. $\sqrt{10^{2\pi}}$

6. $10^{2\pi+3} \cdot 10^{5-\pi}$ 7. $\frac{10^{\sqrt{3}-2}}{10^{\sqrt{3}+2}}$ 8. $\frac{6^{\sqrt{2}} \cdot 6^{\sqrt{8}}}{6^{3\sqrt{2}}}$ 9. $\left(\sqrt{2}^{\sqrt{2}}\right)^{\sqrt{2}}$

Solve the equation.

10. $a^{\frac{3}{4}} = 8$ 11. $y^{-\frac{1}{2}} = 6$ 12. $4p^{\frac{3}{5}} = 24$ 13. $(3n-1)^{\frac{3}{2}} = 125$

14. $3^x = 27$ 15. $2^x = \frac{1}{8}$ 16. $25^{2x} = 5^{x+6}$ 17. $4^{x+1} = 8^{x-3}$

18. $6^{x^2+7} = 36^{4x}$