Name: _____ Date: _____ Block: _____

Monday-
Modeling Rational Functions Assignment
I am 400 miles from my home.
1. What is my average speed if I take 8 hours to get home?
2. How many hours will I have to travel if I am traveling at a speed of 65 miles per hour?
3. Write a function to represent the average speed S(x) given x hours traveled.
4. Find a table of 5 values and sketch a graph of this function.
5. What is the domain and range?
6. What does it mean to our scenario that there are no x- or y-intercept?
7. If I took a 2 hour break part of the way through my trip, how does this change the function?
8. Did my domain and range change?
9. If my trip took 8 hours, what was my speed?
10. Write you own example of a real life rational function problem.

Tuesday-

ID: 1

Algebra 2   Name_____

Translations of Rational Functions Assignment   Date_____ Period_____
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Graph each function. Identify the asymptotes.

1) $f(x) = \dfrac{1}{x+3} - 2$

2) $f(x) = -\dfrac{1}{x+2} + 1$

3) $f(x) = -\dfrac{1}{x^2+4}$

4) $f(x) = \dfrac{1}{x^2-6} + 2$

5) Explain how to find the asyptotes of the following function with out graphing: $f(x) = \dfrac{1}{x^3+2} - 8$.

6) Write an rational function who is translated down 3.8 and right 6.35.

7) Write and graph a function with asyptotes: $x = 2$ and $y = -5$.

Wednesday-
Properties of Rational Functions Assignment
1. Write a rational function that has no y- or x- intercept.
2. Write a rational function that has one vertical asymptote.
3. Write a rational function that has two vertical asymptotes.
4. Write a rational function whose curves are located in the 3rd and 4th quadrants.
5. Write a rational function whose vertical and horizontal asymptotes are not 0.
6. Write a rational function with three vertical asymptotes.

Thursday-

Algebra 2   Name_____

Rational Expressions Assignment
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Simplify each expression.

1) $\dfrac{n^2 - 12n + 35}{n - 7}$

2) $\dfrac{x + 8}{x^2 - x - 72}$

3) $\dfrac{15a^2 - 15a}{25a^2 + 25a}$

4) $\dfrac{v^2 - 14v + 48}{v^2 - v - 56}$

5) $\dfrac{3p^2 + 27p + 60}{p^2 + 7p + 12}$

6) $\dfrac{7n^3 - 28n}{n^2 + 2n - 8}$

7) The volume of a rectangular prism is $x^3 + 3x^2$. If the area of the base is x^2, what is the height?

8) The volume of a rectangular prism is $x^3 - 5x^2 + 4x$. If the area of the base is $x^2 + 4x$, what is the height?

9) You friend Ryan is taking Algebra at CWI and he is making a lot of mistakes when he simplifies rational expressions. What would you say to him go help him?

Friday-

Equations with Rational Exponents Assignment

Solve each equation.

1. $\dfrac{3u}{5} - \dfrac{5}{6} = \dfrac{u}{10}$

2. $\dfrac{2x-1}{6} + \dfrac{x+2}{4} = \dfrac{1}{3}$

3. $\dfrac{w-2}{2} - \dfrac{w-1}{5} = \dfrac{1}{4}$

4. $\dfrac{x^2}{3} - \dfrac{x}{6} = 1$

5. $\dfrac{m(m-1)}{3} = \dfrac{m+1}{2}$

6. An old conveyor belt takes 21 hours to move one day's coal output from the mine to a rail line. A new belt can do it in 15 hours. How long does it take when both are used at the same time?