Algebra 2 Honors- Week 15 Homework

**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-**

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**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-**

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**Friday-**

**Equations with Rational Exponents Assignment**

Solve each equation.

1. $\frac{3u}{5}-\frac{5}{6}=\frac{u}{10}$ 2. $\frac{2x-1}{6}+\frac{x+2}{4}=\frac{1}{3}$ 3. $\frac{w-2}{2}-\frac{w-1}{5}=\frac{1}{4}$ 4. $\frac{x^{2}}{3}-\frac{x}{6}=1$ 5. $\frac{m(m-1)}{3}=\frac{m+1}{2}$

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?