Name: _____ Date: _____ Period: _____

Algebra 2: Chapter 9 – Rational Equations Applications

Distance , Rate, Time Word Problems

Formula: Rate x Time = Distance

Steps:

1. **Find what is given (underline OR highlight it) and what is missing (circle it).**
2. **Fill out box with given information.**
3. **Find what you are looking for and devise a plan to find the unknown. There is ALWAYS a way!**

Ex 1) Shawn bikes 15 miles in the same time that Jack runs 8 miles. Shawn's speed is 5 mph faster than Jack's speed. Find Shawn's speed and Jack's speed.

	Rate x	**Time** =	**Distance**

Practice:

1) A Ferrari travels 70 miles in the same time that the Oscar Mayer Wienermobile drives 20 miles. The Wienermobile's speed is 40 mph slower than the Ferrari's speed. Find the speed of the Ferrari and the speed of the Wienermobile.

	Rate x	**Time** =	**Distance**

2) Michael's motorboat travels 30 miles in a lake (with no current) in the same time that Kelly rows her rowboat 5 miles. Kelly rows 20 mph slower than Michael's motorboat travels. Find the speed of both.

	Rate x	**Time** =	**Distance**

Work Problems

Formula: **Work Rate x Time = Work**

- **Work Rate** = the fractional part of a job done in a given unit of time.
  - Work rate is the amount of time it takes ONE person or ONE thing to complete an entire job by THEMSELF/ITSELF.
- **To finish a job, the sum of the fractional parts of the work done must be 1.**

Ex 1) Susan can sort mail in 15 minutes, but if Kathy helps, they can sort in 8 minutes. How long would it have taken Kathy alone?

	Work Rate x	Time =	Work Done

Ex 2) An above ground pool can be filled in 5 hours and drained in 9 hours. If the drain is left open, how many hours will it take to fill an empty pool?

	Work Rate x	Time =	Work Done

Practice

1) A panda can eat the leaves from a certain bamboo stem in 14 minutes. Together, two pandas could eat the leaves from that same stem in 9 minutes. How long would it have taken the second panda to eat the leaves from the stem by itself?

	Work Rate x	Time =	Work Done

2) A tank can be filled in 6 hours and drained in 18 hours. If the drain is left open, how many hours will it take to fill an empty tank?

	Work Rate x	Time =	Work Done