HN Math III Notes Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unit 5, Day 4 Applications of Rational Functions Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Rate of Work Problems**
* These problems often ask “how long does it take to complete the job when working together?”
* General Format of your equations should be:

$$\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_ + \\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_ = 1$$

\*\*TOGETHER TIME GOES ON TOP!

**Ex 1:** Savannah can paint a room in seven hours. Jordan can paint the same room in nine hours. How long does it take for both Savannah and Jordan to paint the room if they are working together?

Equation:

Solution:

**Ex 2:** It takes Shelby 2 hours to cut the grass. Abigail needs 3 hours and 30 minutes to cut the grass. If they work together, how long will it take them to cut the grass?

Equation:

Solution:

**Ex 3:** Rodney and Tom can build a cabinet together in 12 hours.  Rodney can build the cabinet alone in 16 hours.  How long will it take Tom to build the cabinet alone?

Equation:

Solution:

**Ex 4:** If you and a man can build, in 20 days, a house that would take the man 30 days to build alone, how long would it take you to build the house alone? (Assume you know how!)

Equation:

Solution:

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Unit 5, Day 4 HW Date: Period:

**Solve the following:**

1. Working alone, Ryan can dig a 10 ft by 10 ft hole in five hours. Castel can dig the same hole in six hours. How long would it take them if they worked together?
2. Shawna can pour a large concrete driveway in six hours. Dan can pour the same driveway in seven hours. Find how long it would take them if they worked together.
3. Working together, Jenny & Natalie can mop a warehouse in 5.14 hours. Had she done it alone it would have taken Natalie 12 hours. How long would it take Jenny to do it alone?
4. Krystal can wax a floor in 16 minutes. One day her friend Perry helped her and it only took 5.76 minutes. How long would it take Perry to do it alone?
5. After a heavy snowfall, Brian can shovel all of the driveway in 30 minutes. If his younger brother Allen helps, the job takes only 20 minutes. How long would it take Allen to do the job by himself?
6. Mr. McGregor has discovered that a small boy can destroy his entire garden in one hour less than the amount of time it takes a large dog to do the same job. If the dog and boy can destroy the garden together in 40 minutes, how long does it take each of them working individually?