Name:_____ Date:_____

Math 10/11 Honors HW Section 5.3 Applications of Rational Expressions Part 1 Word Problems

1. One water pipe can fill a tank in 10 minutes, while a second pipe can fill the same tank in 15 minutes. How long would it take to fill the tank if both pipes were working?

2. Ken can fill a bin with pluots in 20 minutes. Kristen can fill the same bin with pluots in 25 minutes. If Ken and Kristen work together, how fast can they fill the bin?

3. In order to fill his pool Jared uses two hoses. Working alone, the first hose would take 10 hours to fill the pool and the second hose would take 15 hours to fill the pool. How long will it take with both hoses filling the pool?

4. Shawn usually mowes his lawn in 5 hours. Tracy can mow the same lawn in 4 hours. How long would it take them to mow the lawn working together?

5. The air conditioner in Mr. Blakely's office can cool the room 10 degrees in 90 min. Two doors down, Mr. Burch has an office of the same size but a nicer air conditioner. That air conditioner can cool down the room 10 degrees in 60 min. If we attach both air conditioners to Mr. Blakely's office, how long would it take to cool the room 10 degrees?

6. Paige can sort her toys in 6 fewer hours that Madison can. When they work together, it takes them only 4 hours to sort the toys. How long would it take for each of them to sort the toys alone?

7. Two painters, working together, can paint a house in 10 hours. Working alone, the first painter can paint the house in 15 hours. How long would it take for the second painter to paint the house working alone?

8. Working as a team, it takes Zoe and Haley 24 minutes to defeat the game *Math Attack*. Working by herself, it would take Zoe 36 minutes to beat the game. How long would it take Haley to beat the game by herself?

9. Zach can paint a house in 5 hours. Tyler can paint a house in 7 hours. If Zach and Tyler work together, how long should it take for them to paint 2 houses?

10. Jeff can help a customer with a new phone purchase 2 times faster than Lindsay can. When Jeff and Lindsay work together, they can help a customer with a new phone in 3 minutes. How long would it take for each of them to help the customer alone?

11. A company's new printer can print checks three times faster than its old printer. With both printers working, the checks can be printed in 6 minutes. How long would it take to print the checks with the new printer only?

12. When she works alone, Jennifer can feed all of the animals in the pet store 2 hours faster than James can. After working for 4 hours, James has to quit to help customers. At this point, Jennifer takes over feeding the animals. It takes her 3 hours to finish the feeding the animals. How long would it take each of them to feed the animals working alone?

13. Don can split a cord of wood in 6 fewer hours than MaryAnn. When the work together, they can split the cord in 4 hours. How long would it take each one to split a cord alone?

14. Mark can prune the trees at his house in 9 fewer hours than Matt can. When they work together, it only takes them 6 hours to prune the trees. How long would it take Matt to prune the trees alone?

15. When he works alone, Truda takes 4 hours longer than it takes Ivo to clean the bathrooms in the gym. After working for 3 hours, Truda quits for the day. If it takes Ivo 6 hours to finish cleaning the bathrooms in the gym, how long would it have taken Truda to clean the bathrooms by herself?

16. Dan and Brent, working together, can frame a house in 20 hours. Working alone, it would take Dan 30 hours longer than it would take Brent to frame the house. How long would it take each of them to frame the house alone?

17. Working together, it would take Scott and Patty 6 hours to clean their house. It would take Patty 3 times as long as it would take Scott to clean the house by herself. How long would it take each of them to clean the house alone?

18. Andrew can paint a painting 2 times faster than Ethan can. When they work together on a painting it takes them 9 hours to paint. How long would it take Ethan to paint the painting by himself?

19. Two identical printers are printing the payroll for College of the Sequoias. After they work together for 4 hours, one of the printers breaks down. The second printer takes 3 more hours to finish the job. How long would it take for one printer, working alone to print all of the payroll?

20. Two pipes are filling a pool with water. Working alone, the smaller pipe would take 3 hours longer to fill the pool than the larger pipe. After working for 2 hours alone, the small pipe breaks. It takes the larger pipe 2 hours to finish filling the pool. How long would it take the large pipe alone to fill the pool?

21. Checkers can catch and kill a single mouse in 40 seconds. Muffy can catch and kill a single mouse in 70 seconds. If Checkers and Muffy work together, how long would it take to catch and kill a nest of mice that contains 11 mice?

22. Stephanie can run the daily lab tests in 4.8 hours. Eric can do the job in 2.4 hours. How long would it take for them, working together, to run the daily lab tests twice?

23. To winterize a pool, two drains, working together can drain the pool in 3 hours. Working alone, the smaller drain would take 9 hours longer than the larger drain. How long would it take for the smaller drain to drain only half of the water out of the pool?

25. Dave is training for a big race. Today, he ran 14 miles in 2 hours. After running the first nine miles at a certain speed, he increases his speed by 4 miles per hour. What is Dave's running speed for the first 9 miles?

26. Sue power walks 3 km/hour faster than Tim. In the time it takes Tim to walk 7.5 km, Sue walks 12 km. What is Sue's walking speed?

27. Eric's truck drives 30 mph faster than Tim's motorcycle. In the same time it takes Tim to drive 75 miles, Eric can drive 120 miles. Find Tim and Eric's driving speed.

28. Andy's tractor is just as fast as Dan's. It takes Andy 1 hour more to spray his trees than it takes Dan to spray his trees. If Andy drives 20 miles in his field to spray, and Dan drives 15 miles in his fields to spray, how long does it take for Dan to spray his trees?

29. A freight train leaving from Hanford is 14 mph slower than the passenger train which also leaves from Hanford. The passenger train travels 400 miles in the same amount of time that the freight train travels 330 miles. What is the speed of the passenger train?

30. It took Erin the same time to drive 21 miles as it took Brent to drive 15 miles. Erin's speed was 10 mph faster than Brents speed. How fast did Erin drive?

31. Jeff hiked to the top of Mt. Whitney from the trail head (a distance of 14 miles). Jon, after camping overnight on the trail, hiked only 12 miles to the top of Mt. Whitney. If Jeff and Jon were both hiking for the same amount of time, and Jon hikes 1 mph slower than Jeff, how fast did each man hike?

32. A load of stone fruit is being trucked to Los Angeles, CA from Kingsburg, CA. The truck is moving 40 mph faster than a train which is also going to Los Angeles. In the time it takes the train to travel 150 miles, the truck can travel a total of 350 miles. What is the trucks driving speed?

33. Colleen bicycles 6 km/hr faster than George. In the same time it take George to go 42 km, Colleen can go 60 km. How fast is Colleen?

34. Tom Farrell is training for another Olympic Medal. To do so, Tom swims 2 miles at a certain speed and then increases his pace by 2 mph and continues for another 12 miles. If Tom's workout lasted 4 hours, how fast was he swimming on each leg of the swim?

35. The rate of a motorcycle is 40 mph faster than the rate of a bicycle. The motorcycle travels 150 miles in the same amount of time it takes the bicycle to travel 30 miles. Find the rate of the motorcycle.

36. Terran bikes6 mph faster than his wife, Marria. In the same time that it takes Marria to bike 27 miles, Terran can bike 25 miles. What is Terrans biking speed?