Work Rate Word Problems

1. Mike, an experienced bricklayer, can build a wall in 3 hours, while his son, who is learning, can do the job in 6 hours. How long does it take for them to build a wall together?

2. It takes Sam 4 hours to rake the front lawn while his brother, Dave, can rake the lawn in 2 hours. How long will it take them to rake the lawn working together?

3. Mia can clean her apartment in 6 hours while her roommate can clean the apartment in 5 hours. If they work together, how long would it take them to clean the apartment?

4. Brian can lay a slab of concrete in 6 hours, while Greg can do it in 4 hours. If Brian and Greg work together, how long will it take?

5. Josephine can correct her students test papers in 5 hours, but if her teacher's assistant helps, it would take them 3 hours. How long would it take the assistant to do it alone?

6. Washing his dad's car alone, eight-year-old Levi takes 2.5 hours. If his dad helps him, then it takes 1 hour. How long does it take Levi's dad to wash the car by himself?

7. At the end of the day Dodie can clean her hair salon in 15 minutes. Ann, who works with her, can clean the salon in 30 minutes. How long would it take them to clean the shop if they work together?

8. Ronald can shovel the driveway in 4 hours, but if his brother Donald helps it would take 2 hours. How long would it take Donald to shovel the driveway alone?

9. Brandy can frame a room in 1 hour, while Jake takes 4 hours. How long could they frame a room working together?

10. Prem takes 3 hours to mow the lawn while her cousin, Barb, takes 2 hours. How long will it take them working together?

11. Jeffrey can paint a house in 6 days, but if he gets a helper, he can do it in 4 days. How long would it take the helper to paint the house alone?

12. Marta and Deb work together writing a book that takes them 90 days. If Marta worked alone, it would take her 120 days. How long would it take Deb to write the book alone?

Questions are drawn from OpenStax Intermediate Algebra 2e on January 10, 2023. Access for free at https://openstax.org/books/intermediate-algebra-2e/pages/preface

Key

1. 2 hours
2. 4/3 hours = 1 hour and 20 minutes (approximately 1.33 hours)
3. 30/11 hours (approximately 2.73 hours, or 2 hours and 44 minutes)
4. 12/5 hours = 2.4 hours = 2 hours and 24 minutes
5. 15/2 hours = 7.5 hours = 7 hours and 30 minutes
6. 5/3 hour = 1 hour and 40 minutes (approximately 1.67 hours)
7. 10 minutes
8. 4 hours
9. 4/5 hours = 0.8 hours = 48 minutes
10. 6/5 hours = 1.2 hours = 1 hour and 12 minutes
11. 12 days
12. 360 days