Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ HR: \_\_\_\_\_\_\_\_

**Lesson: From Ratio Tables to Equations**

Exercise 1

Jorge now plans to mix red paint and blue paint to create purple paint. The color of purple he has decided to make combines red paint and blue paint in the ratio . If Jorge can only purchase paint in one gallon containers, construct a ratio table for all possible combinations for red and blue paint that will give Jorge no more than gallons of purple paint.

|  |  |  |
| --- | --- | --- |
| **Blue ()** | **Red ()** | **Relationship from Blue to Red Paint** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. What is the **constant** being used in the table to demonstrate the relationship between Blue paint and Red Paint?
2. Write an **equation** that will let Jorge calculate the amount of red paint he will need for any given amount of blue paint.
3. If Jorge has gallons of **blue paint**, how much red paint will he have to use to create the desired color of purple? Show all work.
4. If Jorge has gallons of **red paint**, how much blue paint will he have to use to create the desired color of purple? Show all work.

**Exercise 2**

During a particular U.S. Air Force training exercise, the ratio of the number of men to the number of women was . Use the ratio table provided below to create at least two equations that model the relationship between the number of men and the number of women participating in this training exercise.

|  |  |
| --- | --- |
| **Women ()** | **Men ()** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

1. Write an **equation** to determine the number of men given any number of women.
2. If women participated in the training exercise, use one of your equations to calculate the number of men who participated.

**Exercise 3**

Malia is on a road trip. During the first five minutes of Malia’s trip, she sees cars and trucks. Assuming this ratio of cars to trucks remains constant over the duration of the trip, complete the ratio table using this comparison. Let represent the number of trucks she sees, and let represent the number of cars she sees.

|  |  |
| --- | --- |
| **Trucks ()** | **Cars ()** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

1. What **equation** would model the relationship between cars and trucks?

b. At the end of the trip, Malia had counted trucks. How many cars did she see?

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ HR: \_\_\_\_\_\_\_\_\_\_

**Homework – From Ratio Tables to Equations**

Kevin is training to run a half-marathon. His training program recommends that he run for minutes and walk for minute. Let represent the number of minutes running, and let represent the number of minutes walking.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Minutes Running ()** |  |  |  |  |  |
| **Minutes Walking ()** |  |  |  |  |  |

1. What **equation** could you use to calculate the minutes spent walking if you know the minutes spent running?
2. Use the equation to calculate the number of minutes walking if he runs 105 minutes. Show all your work.