**Creating and Solving Rational Equation Word Problems**

**USE EQUATION: d=rt**

**d= job, r=rate, t=time**

1. Nolan can eat a bag of popcorn in 2 minutes. Madison can eat a bag of popcorn in 3 minutes. If Nolan and Madison go to the movies together and share a bag of popcorn how long will it take them to finish?
   1. Create an equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
|  | Distance | Time | Rate |
| Nolan |  |  |  |
| Madison |  |  |  |
| Together |  |  |  |

* 1. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Working together, it takes Sam, Jenna, and Francisco two hours to paint one room. When Sam works alone, he can paint one room in 𝟔 hours. When Jenna works alone, she can paint one room in 𝟒 hours. Determine how long it would take Francisco to paint one room on his own.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Distance | Time | Rate |
| Sam |  |  |  |
| Jenna |  |  |  |
| Francisco |  |  |  |
| Together |  |  |  |

* 1. Create an equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Suppose one painter can paint the entire house in twelve hours, and the second painter takes eight hours. How long would it take the two painters together to paint the house?
   1. Create an equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
|  | Distance | Time | Rate |
| Painter 1 |  |  |  |
| Painter 2 |  |  |  |
| Together |  |  |  |

* 1. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Mark can paint one hour in 8 hours. Working together with Rick, the two can paint 1 house in 6 hours. How long would it take Rick to paint the house alone?
   1. Create an equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
|  | Distance | Time | Rate |
| Mark |  |  |  |
| Rick |  |  |  |
| Together |  |  |  |

* 1. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Jordan can rake the family yard in 5 hours. His brother Caleb can rake the yard in 4 hours. If the two work together, how long will it take them to rake the yard?
   1. Create an equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
|  | Distance | Time | Rate |
| Jordan |  |  |  |
| Caleb |  |  |  |
| Together |  |  |  |

* 1. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Bob can paint a fence in 5 hours, and working with Jen, the two of them painted a fence in 2 hours. How long would it have taken Jen to paint the fence alone?
   1. Create an equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
|  | Distance | Time | Rate |
| Bob |  |  |  |
| Jen |  |  |  |
| Together |  |  |  |

* 1. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Jeff, Rico and Van are mowing lawns in their neighborhood. Working alone, Jeff can mow a lawn in 30 minutes, Rico can mow the same lawn in 60 minutes, and Van can mow the lawn in 40 minutes. How long will it take the three boys to mow the lawn if they work together, rounded to the nearest minute?
   1. Create an equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
|  | Distance | Time | Rate |
| Jeff |  |  |  |
| Rico |  |  |  |
| Van |  |  |  |
| Together |  |  |  |

* 1. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Rosa can jog 5 miles downhill in the same time it takes her to jog 3 miles uphill. She jogs downhill 4 miles per hour faster than she jogs uphill. What is her speed each way?

|  |  |  |  |
| --- | --- | --- | --- |
|  | Distance | Time | Rate |
| Uphill |  |  |  |
| Downhill |  |  |  |

* 1. Create an equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_