

Lesson 14: From Ratio Tables, Equations, and Double Number Line Diagrams to Plots on the Coordinate Plane

Classwork

Kelli is traveling by train with her soccer team from Yonkers, NY to Morgantown, WV for a tournament. The distance between Yonkers and Morgantown is 400 miles. The total trip will take 8 hours. The train schedule is provided below:

Leaving Yonkers, New York	
Destination	Distance
Allentown, PA	100 miles
Carlisle, PA	200 miles
Berkeley Springs, WV	300 miles
Morgantown, WV	400 miles

Leaving Morgantown, WV	
Destination	Distance
Berkeley Springs, WV	100 miles
Carlisle, PA	200 miles
Allentown, PA	300 miles
Yonkers, NY	400 miles

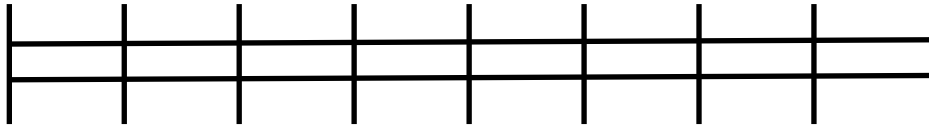


Exercises

- Create a table to show the time it will take Kelli and her team to travel from Yonkers to each town listed in the schedule assuming that the ratio of the amount of time traveled to the distance traveled is the same for each city. Then, extend the table to include the cumulative time it will take to reach each destination on the ride home.

Hours	Miles

2. Create a double number line diagram to show the time it will take Kelli and her team to travel from Yonkers to each town listed in the schedule. Then, extend the double number line diagram to include the cumulative time it will take to reach each destination on the ride home. Represent the ratio of the distance traveled on the round trip to the amount of time taken with an equation.



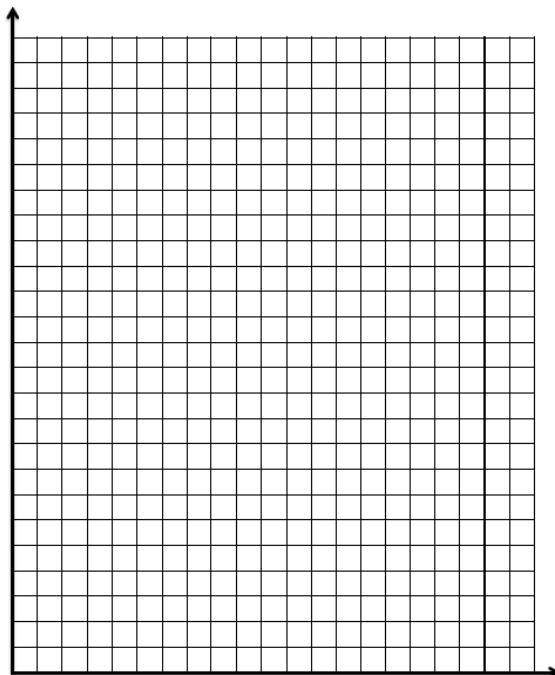
Using the information from the double number line diagram, how many miles would be traveled in one hour?

How do you know?

Example 1

Dinner service starts once the train is 250 miles away from Yonkers. What is the minimum time the players will have to wait before they can have their meal?

Hours	Miles	Ordered Pairs



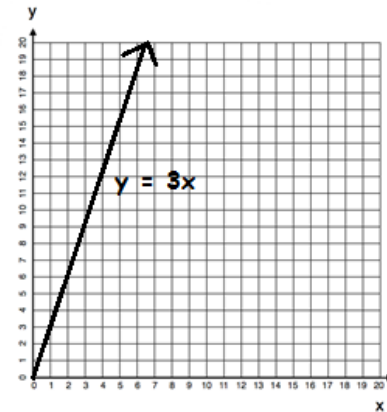
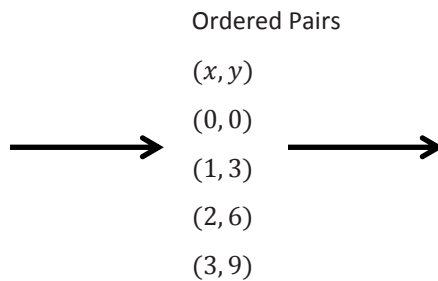
Lesson Summary

A ratio table, equation, or double number line diagram can be used to create ordered pairs. These ordered pairs can then be graphed on a coordinate plane as a representation of the ratio.

Example:

Equation: $y = 3x$

x	y
0	0
1	3
2	6
3	9

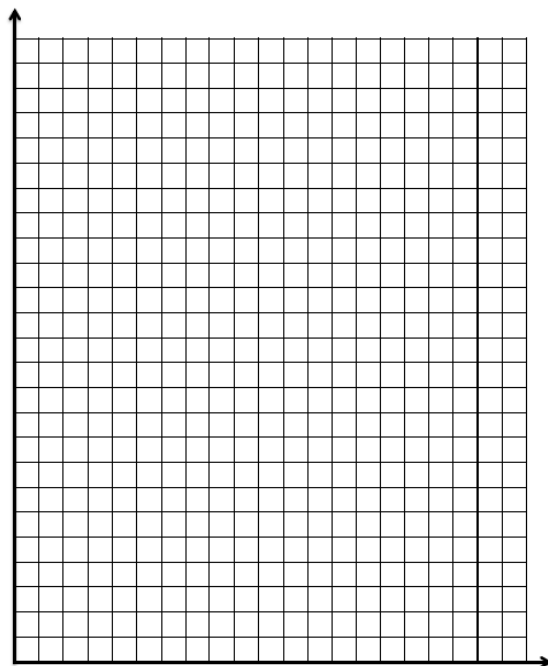


Problem Set

- Complete the table of values to find the following:

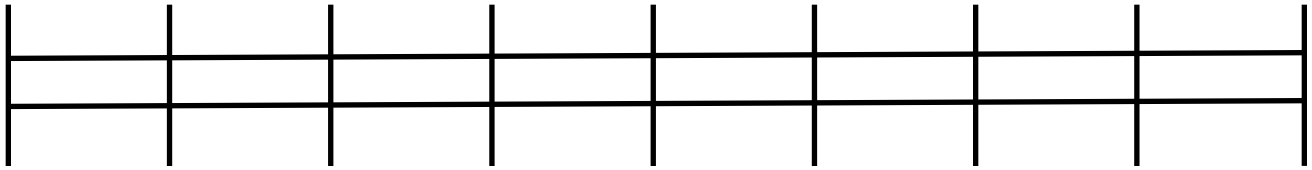
Find the number of cups of sugar needed if for each pie Karrie makes, she has to use 3 cups of sugar.

Pies	Cups of Sugar
1	
2	
3	
4	
5	
6	



Use a graph to represent the relationship.

Create a double number line diagram to show the relationship.



2. Write a story context that would be represented by the ratio 1:4.
Complete a table of values for this equation and graph.

