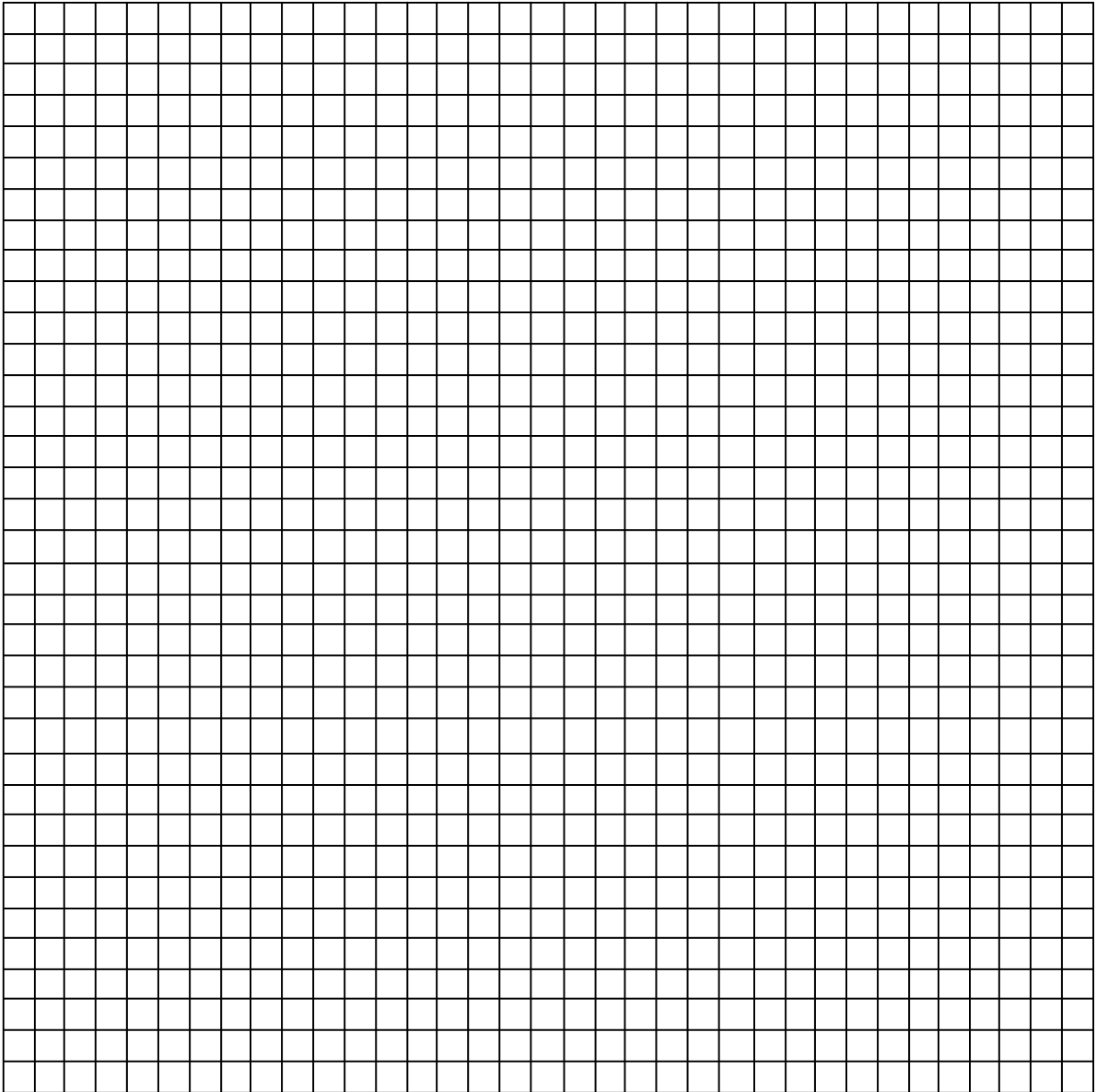


Making Trains

NAME: _____

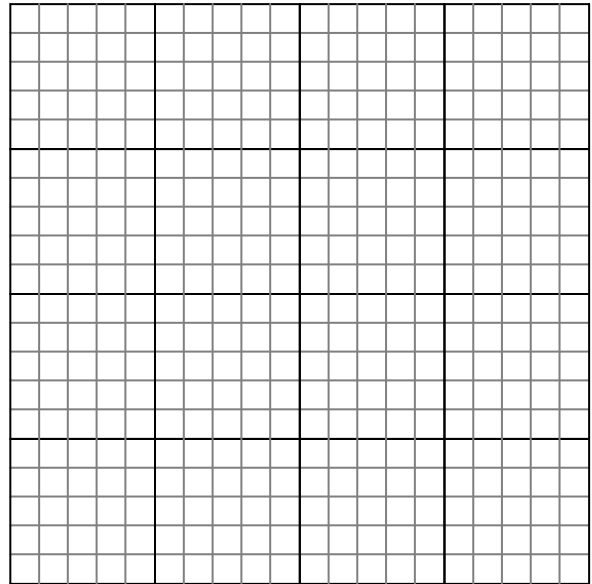
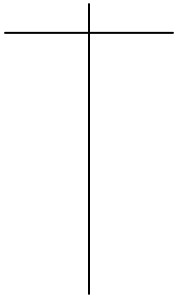
DATE: _____

1. Make all of the trains of length 1, 2, 3, 4, and 5. Record them using the grid below. As you are building them, think about and write down how you know that you made all of the trains. Compare your work with your neighbor's work to see if you might have missed any of the possible trains.



2. Look at all the trains of length 3. How can you use those trains to make the trains of length 4? Explain how you were able to do this.

3. Make a table below that shows the different train lengths and the numbers of ways to make each length.



4. Use the grid to the right to make a scatter plot that shows your data.

5. How many ways do you think there are to make a train of length 6? How do you know you are right (without building all of them)?

6. Write a rule that describes how to find the number of trains of length n .