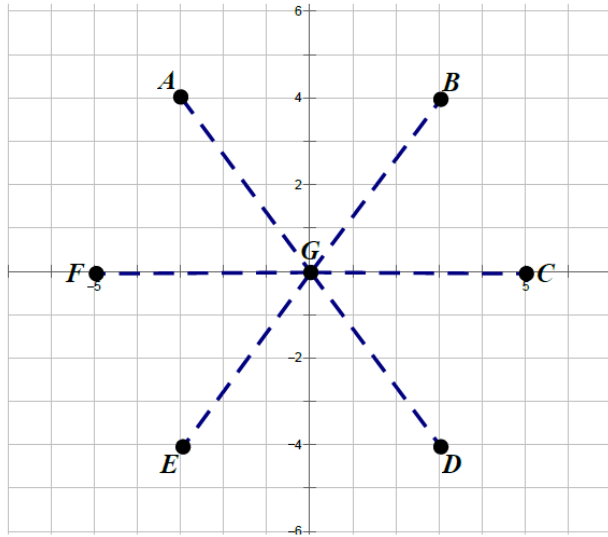


7.1 Go the Distance (A Develop Understanding Task)

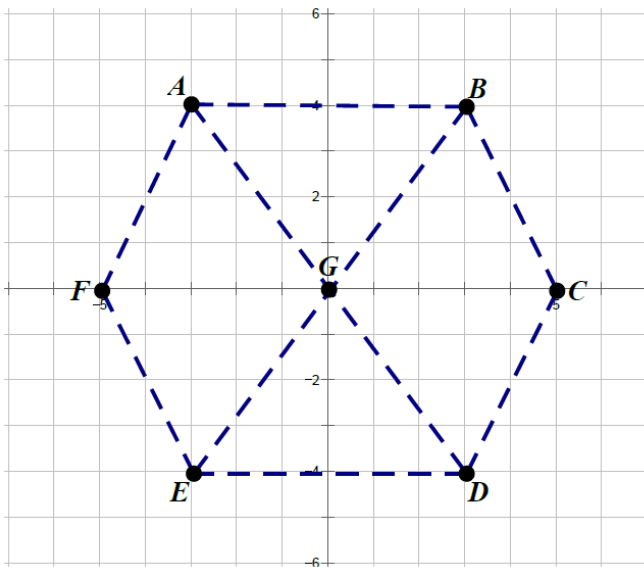
The drill team at Podunk High School lay out their positions in a grid when they choreograph the dance moves they do on the field. In one of their dances, they plan to make patterns holding long, wide ribbons that will span from one girl in the middle to six other girls. On the grid their pattern looks like this:



The question the girls have is how long to make the ribbons. Some girls think that the ribbon from Gabriela (G) to Courtney (C) will be shorter than the one from Gabriela (G) to Brittney (B).

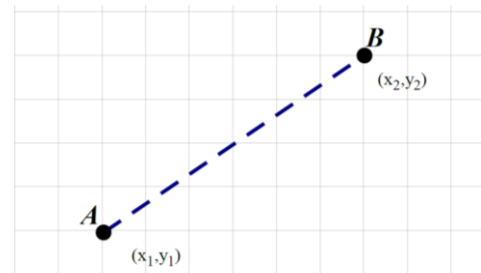
1. How long does each ribbon need to be?
2. Explain how you found the length of each ribbon.

When they have finished with the ribbons in this position, they are considering using them to form a new pattern like this:



3. Will the ribbons they used in the previous pattern be long enough to go between Brittney (B) and Courtney (C)? Explain.

Gabriela thinks there might be a process that can be used to find the distance between 2 points. She says "I'm going to start with 2 points and draw a line between them that represents the distance. I will name them $A(x_1, y_1)$ and $B(x_2, y_2)$. When I figured the length of the ribbons what did I do next?"



4. Think about how you found the length of the ribbon and write down the steps, using A and B.

5. Use the process you came up with to find the distance between 2 points located at $(-1, 5)$ and $(2, -6)$.

6. Use your process to find the perimeter of the hexagon pattern in #3.