

Don't Make a Triangle

Overview: This is a cool two-player geometry game with lots of strategy involved. You'll need paper and two different-colored markers or crayons. The object is *not* to draw a triangle (or to force your opponent to draw one).

Materials

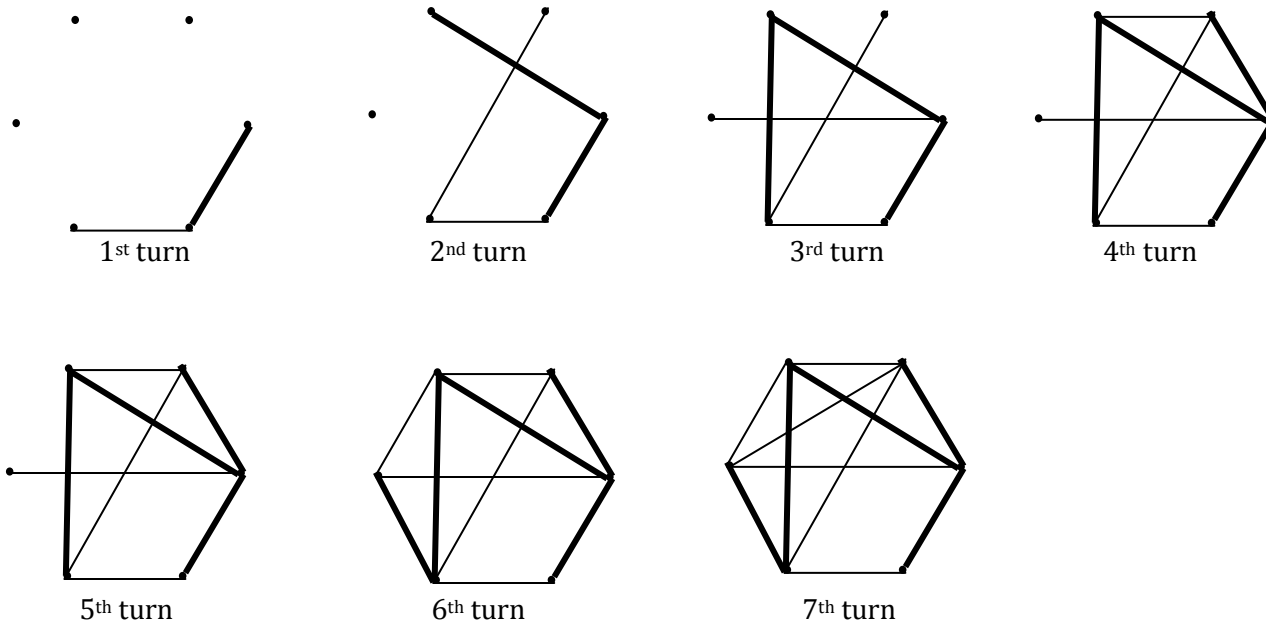
- Two different colors of crayons, markers, or pens
- Paper

Activity: To start off, make the board by drawing six dots to form the corners of a hexagon. (I'll draw lines of different thicknesses instead of having different colors.) You have the thicker pen, and I have the thin one. Here's how it works:

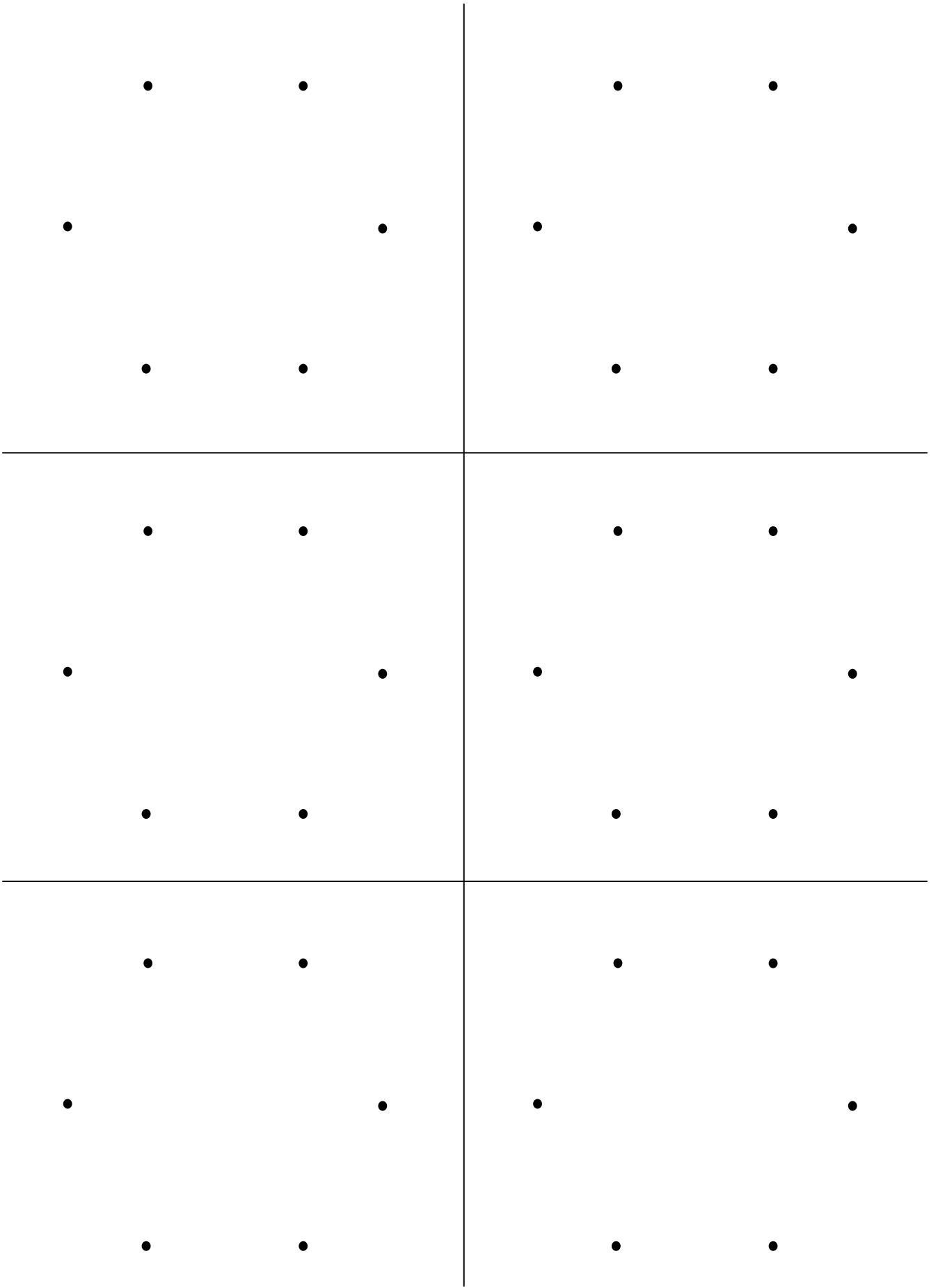
The goal is to connect the dots *without* making a triangle (of any size) with your own ink color. You may make a triangle using more than one color. Look at the diagrams to see what I mean.

I'll go first with the thin line on the first turn. Then you draw the thicker line.

We'll do this for a couple of rounds, but then do you see what happens on turn #7? The move **MUST** be a triangle!



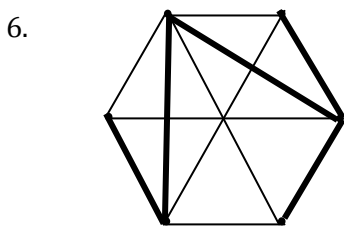
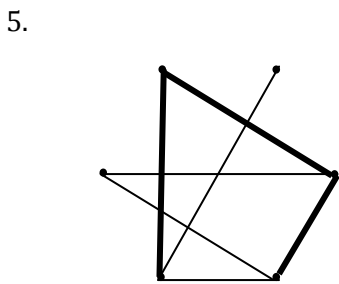
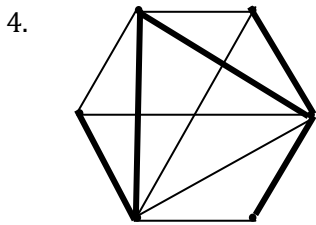
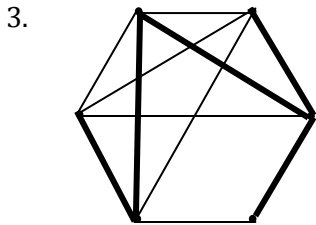
Now you try! Turn the page for a few pre-made hexagons to try this out on.



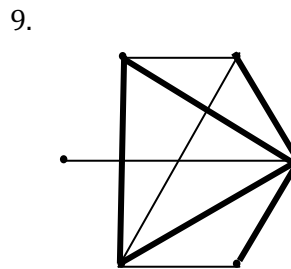
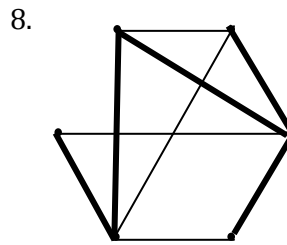
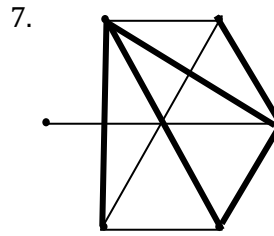
Exercises

1. What is a triangle?
2. What is the name of the largest figure that can be generated when the six dots in the lesson are connected to each other?

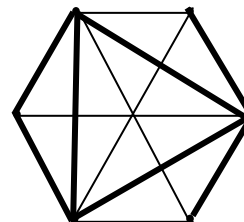
How many triangles would the player with the faint pen make in the figures below?



What is wrong with the player with the thick ink pen making the following moves (If there are triangles made, identify the number?)



10. Identify the name of the largest quadrilateral made by the player with the thick ink pen in the diagram below.



Answers to Exercises: Don't make a triangle

1. Is a three-sided figure
2. Hexagon
3. 2
4. 1
5. 2
6. 3
7. The player would have made one triangle with her own ink which is against the rules of the game
8. No mistake made
9. The player would have made one triangle with her own ink which is against the rules of the game
10. Quadrilateral