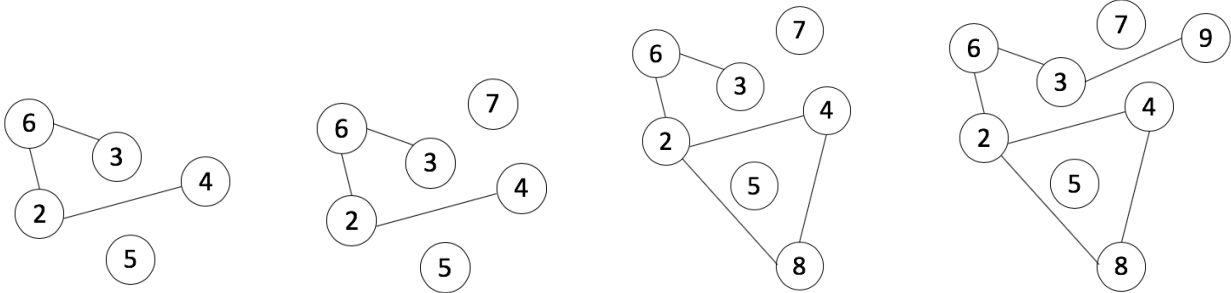


Mathletes Problem of the Week #16

Factor Graphs



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The figures above are factor graphs. The first factor graph was made by writing down the numbers 2 through 6 and then connecting each number to its factors with a line. Recall that a factor is a number you can divide a number evenly by. For example, 2 is a factor of 4 because two goes into four exactly two times ($2 \times 2 = 4$). And 2 and 3 are factors of 6 because $2 \times 3 = 6$. The next factor graph contains the numbers 2 through 7. The third graph adds the number 8 and then the last one contains all the numbers from 2 through 9. Notice that the lines connecting numbers to their factors CANNOT cross!

- Make a factor graph that contains the numbers 2 through 10. (Remember, the lines connecting numbers to their factors cannot cross! You can arrange the numbers however you like. You do not need to keep the arrangement from the factor graphs above.)
- Can you make a factor graph with the numbers 2 through 12? (It might help to first make a list of all the factors of 12!)
- How far can you go? (There is a point at which it becomes impossible. Can you find it?)
- Why do you think we start a factor graph like this with the number 2 and not the number 1?

Solutions & Explanations: (Try one or try them all! Show your solutions below and on the back.)

Name _____ Class _____

(First and last name, please!)

Solutions due: May 16th