# Math Maven's Mysteries

Name: _____

Date: _____

The Case of Loud Louie & His Bad Vibes Band

Detectives, I just got a tip that Loud Louie and the Bad Vibes Band are coming into town tonight. The Bad Vibes Band travels to different towns, playing loud, noisy music in the middle of the night. Once they start up their scary sound, it's impossible for anyone in town to get any sleep! I need your help catching Loud Louie, but first, there are a few things you should know about this clever bandleader:
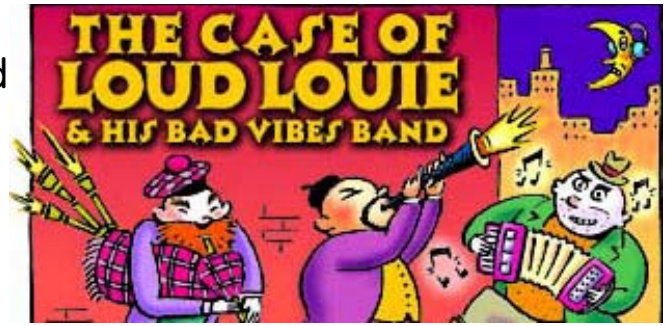
- To avoid getting caught, Loud Louie changes the spot where his band plays each night.

- Loud Louie plays the accordion. There are two other members of his band. One member plays the bagpipes and the other plays the clarinet. (These sure sound horrible together!)

- Each night that the Bad Vibes Band performs, they use a different combination of instruments. For instance, one night the accordion and bagpipes play together. The next evening, you might hear the bagpipes play alone.

- During their stay in a town, the members play their instruments in every possible combination but one. (You see, Loud Louie is very, very, shy. He never plays the accordion alone.)

- And finally, Loud Louie and the Bad Vibes Band never repeat an instrument combination. Once they've played every combination, they take off for a new town!
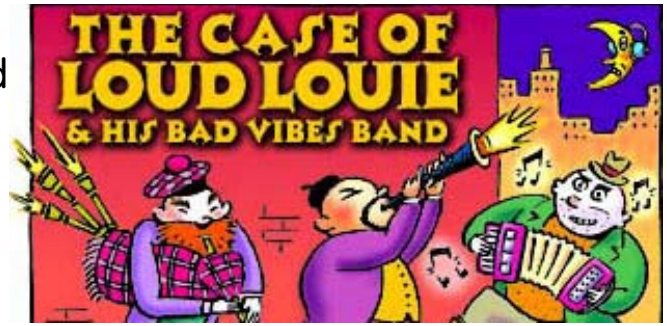
Notes:

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We know where the band is playing tonight, their first night in town. If I can catch Loud Louie this evening, I could stop these cruel concerts once and for all.

Notes:

Solve the Mystery!

All right, super sleuths, if you can help me catch Loud Louie playing the accordion this evening, you could save this town from many sleepless nights! What is the probability that Loud Louie will play the accordion with the Bad Vibes Band tonight?

Probability means the chance that an event will take place. Another way to look at it is: What is the chance that something in particular is going to happen out of all the possible things that could happen?

For example, a spinner has 6 sections; 3 of the sections are green. You want the spinner to land on green. The probability that the spinner will land on green is 3 out of 6, or 3/6. Reduce that probability to its lowest terms, which is 1/2. In other words, the spinner will probably land on green 1 out of 2 times.

To find the probability that Loud Louie will play on the first night, first figure out the total number of nights the band will be in town, or the number of nights it will take for the band to play every combination of instruments. (Detectives, you might want to make a list to help keep track of the combinations.) Then figure out the total number of nights Loud Louie plays the accordion with the Bad Vibes Band.

The probability that Loud Louie will play tonight is the number of nights that Loud Louie plays the accordion out of the total number of nights that the Bad Vibes Band will play in town.

Help me stop the Bad Vibes Band! What is the probability that Loud Louie will play his accordion tonight?

(Here's a Math Maven Hint: Reduce the probability to a fraction in its lowest terms.) :

     A. 1/2

     B. 1/7

     C. 3/7

     D. 3/6

Use this space to show your work: