

1.
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3.
4.
5. We do this problem by trying each case one at a time.

First, let's say Alex C. is telling the truth and the other two are lying. Does the problem make sense? If Alex C. is telling the truth, then it is true that Alex K. wiped the board clean. Then Alex K. says, I did not do it, which is a lie, because he really did wipe it clean. Whoever, Nicholas says, I did not do it neither, but this is the truth since it was Alex K. who wiped the board clean. But now two people are telling the truth, Alex C. and Nicholas. But there is only one truth-teller, so this case doesn't make sense.

Move on to the next case. Now we will say that Alex K. is telling the truth and the other two are lying. Does the problem make sense? If Alex K is telling the truth, then he did not wipe the board. The board wiper is either Alex C. or Nicholas. Now consider Nicholas's statement: I did not wipe the board. He must be lying since Alex K. is the one telling the truth, so he did in fact wipe the board clean. So the board wiper is Nicholas. Now we will check Alex C's statement. He says that Alex K. wiped the board clean, but we know that Nicholas did, so he is lying. So this case makes sense: we have one truth teller and two liars. Let's just check the third case just in case.

Third case: Nicholas is telling the truth and the other two are lying. Nicholas says he did not wipe the board; we assumed he is telling the truth, so one of the Alex's wiped it clean. Alex K says he didn't do it, and he is lying, so that means that he did wipe the board. Alex C says that Alex K wiped the board, which is the truth. However, now we have one liar and two truth tellers, and we know there is only one truth teller and two liars. So this case doesn't make sense.

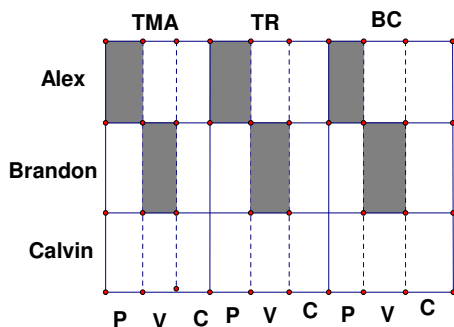
The only case that makes sense is the second case, where we determined that the person who wiped the board was

6. Draw a logic table to help organize the clues. On the top are the schools, the side are the students, and the bottom are the instruments. We will use each clue to narrow down cases one at a time, and we will shade out the combinations that are not possible with each clue.

	TMA			TR			BC		
Alex									
Brandon									
Calvin									
	P	V	C	P	V	C	P	V	C

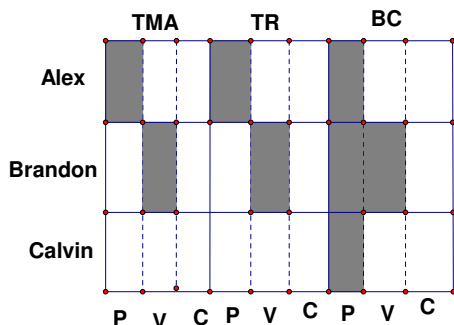
(a) Alex does not play piano and Brandon does not play violin.

So we shade out all the possible combinations of Alex and Piano, and all the possible combinations of Brandon and Violin.



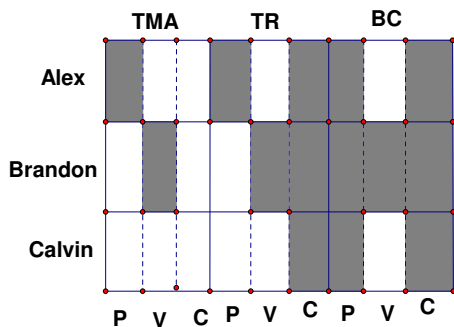
(b) The student who plays piano does not go to Bonita Canyon Elementary School.

So we shade out all the possibilities of Piano and BC.



(c) The student who plays cello goes to Tustin Memorial Academy.

So we shade all the possible combinations of cello and other schools.



(d) Brandon does not attend Turtle Rock Elementary School.

So shade out Brandon and TR.

	TMA			TR			BC		
Alex									
Brandon									
Calvin									
	P	V	C	P	V	C	P	V	C

Now we know that the only school that Brandon can go to is TMA. So the other students cannot attend TMA. So we will cross them out.

	TMA			TR			BC		
Alex									
Brandon									
Calvin									
	P	V	C	P	V	C	P	V	C

Now we see that Alex plays violin, Brandon and Calvin cannot play violin. So we will cross those combinations out. Then we will see that the only option left for Calvin is attending TR Elementary School, and playing piano.

	TMA			TR			BC		
Alex									
Brandon									
Calvin									
	P	V	C	P	V	C	P	V	C

So the other students cannot play piano or go to TR, so we cross those out. Then we arrive on the only possible solution for these clues.

	TMA			TR			BC		
Alex									
Brandon									
Calvin									
	P	V	C	P	V	C	P	V	C

Alex- violin, Bonita Canyon

Brandon- cello, Tustin Memorial

Calvin- piano, Turtle Rock

7. Since the Broncos have played three games, they have played against the Chiefs, Raiders, and Chargers. So the Raiders have played one game against the Broncos. The Chargers only played one game, and that was against the Broncos. So the Chiefs played two games, one against the Broncos, and one against the Raiders (since they couldn't have played the Chargers since they only played one game against the Broncos). So the Raiders have played two games, one against the Broncos, one against the Chiefs. 2

P.S. GO CHARGERS!

8. Mason- pink    Ryder- teal    Hunter- purple