Team Name: _____ **Team ID:** _____

1 Kagami: Small Problems

1. [*8 points*]

	1	4	0	
6	1	2	\	0
1	/	1	2	5
2	2	\	1	4
	5	2	6	

2. [*8 points*]

	2	4	3	0	
3	2	1	/	\	0
2	/	\	2	1	4
10	/	2	1	/	2
1	1	\	/	2	2
	10	1	2	2	

3. [*8 points*]

	1	6	1	2	6	
0	\	1	/	\	2	2
0	/	\	1	2	/	6
5	2	/	\	1	/	0
9	1	2	/	\	\	0
5	/	\	2	/	1	1
	0	0	9	1	6	

4. [*8 points*]

	3	4	3	8	1	
4	\	3	/	2	1	10
4	1	/	2	3	\	1
10	3	2	/	1	\	9
4	/	1	3	\	2	8
2	2	\	1	\	3	9
	9	2	10	9	10	

2 Kagami: Big problems

5. [*14 points*]

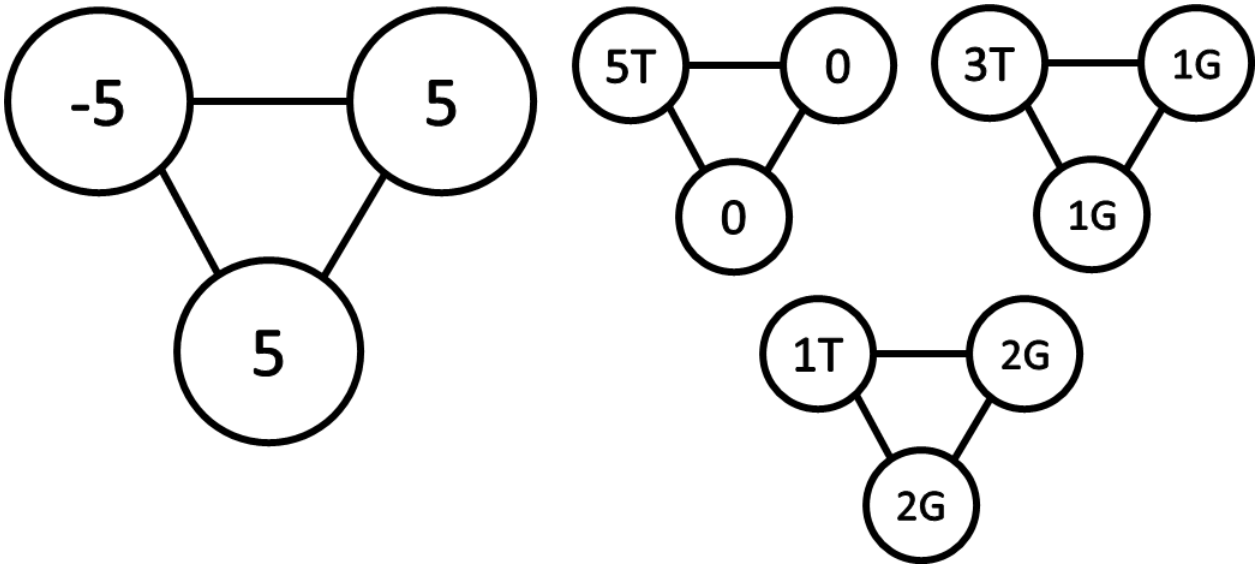
	19	6	19	21	6	13	13	0	
0	\	\	2	4	/	1	3	\	0
0	/	1	\	3	\	/	4	2	13
5	1	\	4	2	\	\	/	3	13
5	4	/	3	/	1	2	\	/	1
44	3	4	/	/	2	/	\	1	6
24	2	3	1	\	/	4	/	\	1
21	\	2	\	\	3	/	1	4	8
0	\	/	\	1	4	3	2	/	0
	0	0	0	6	24	8	44	0	

6. [*14 points*]

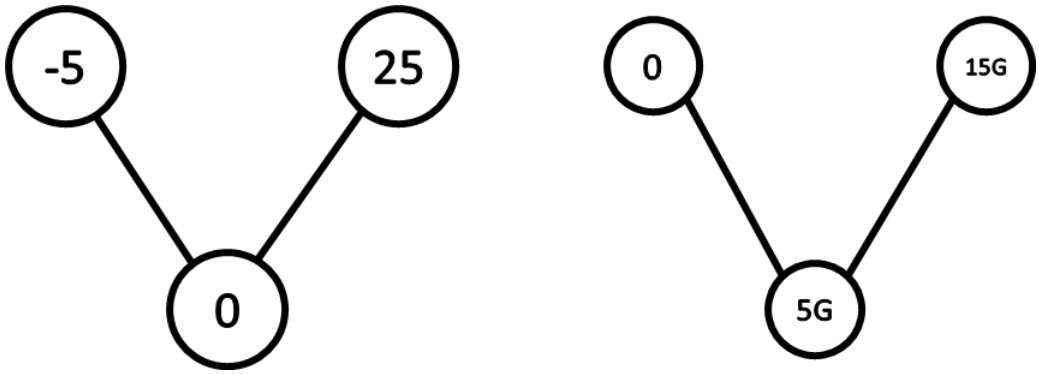
	7	9	9	23	7	14	3	3	
4	\	4	1	2	/	\	\	3	3
23	4	1	3	\	2	/	/	\	3
4	/	\	/	3	1	2	\	4	14
35	3	/	2	1	\	\	4	/	1
23	\	3	/	\	4	/	2	1	11
3	\	2	4	/	/	3	1	\	1
23	1	/	\	/	\	4	3	2	15
2	2	\	\	4	3	1	/	/	0
	3	2	35	7	7	11	15	0	

3 Penny Pushers: Small Problems

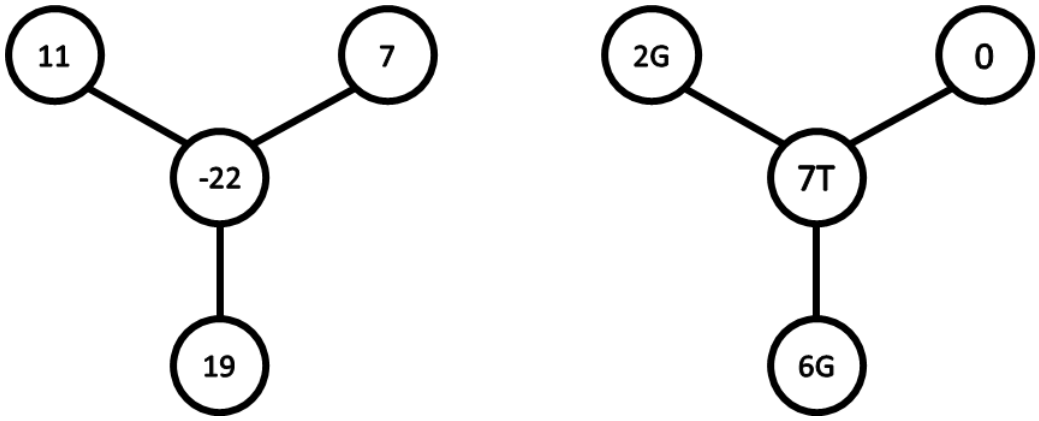
1. [*8 points*]



2. [*8 points*]

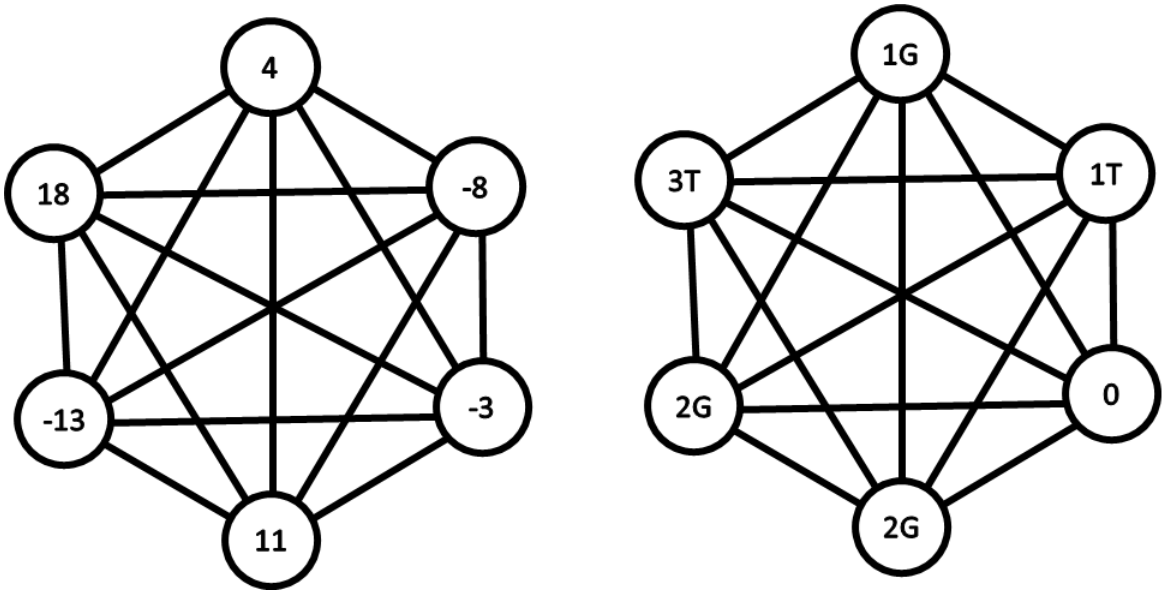


3. [*8 points*]

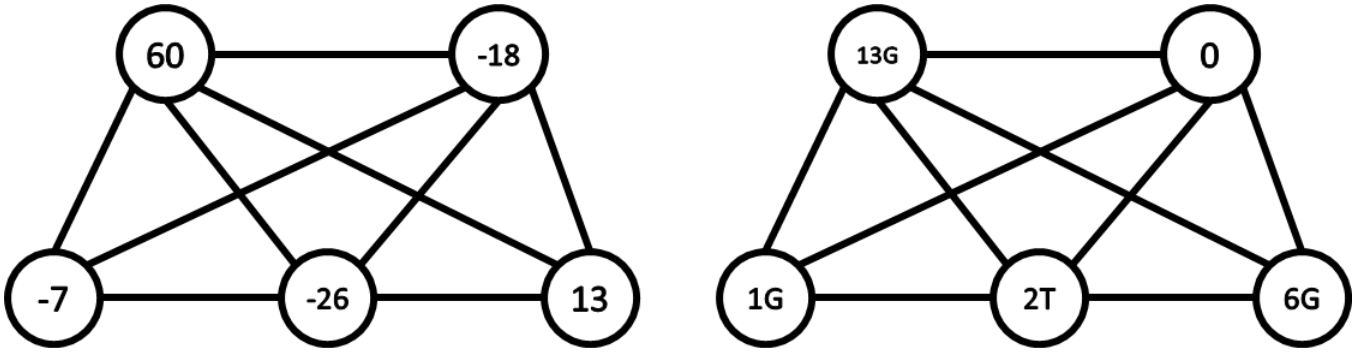


4 Penny Pushers: Big Problems

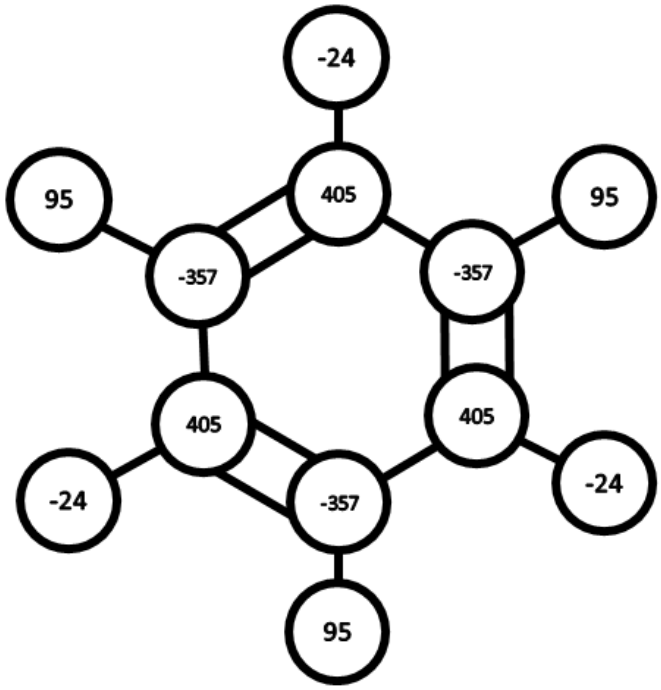
4. [*12 points*]

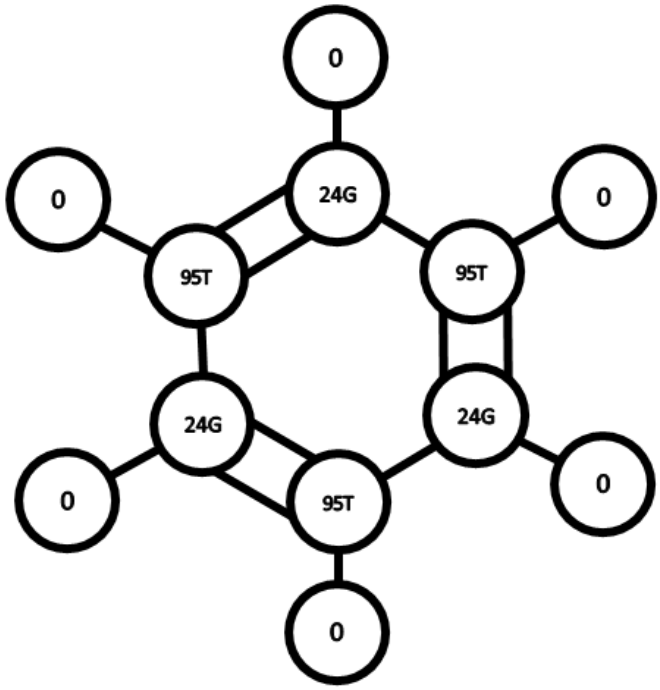


5. [*12 points*]



6. [*12 points*]


-24
95
405
95
-357
-357
405
405
-24
-357
-24
95

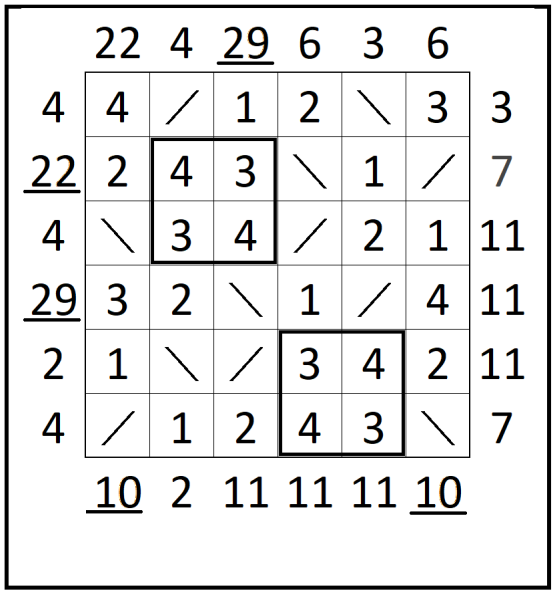

0
0
24G
0
95T
95T
24G
24G
0
95T
0
0

5 Finale

1. Ultimate Kagami: [*10 points*]

   There are four solutions to this puzzle. Find one solution.

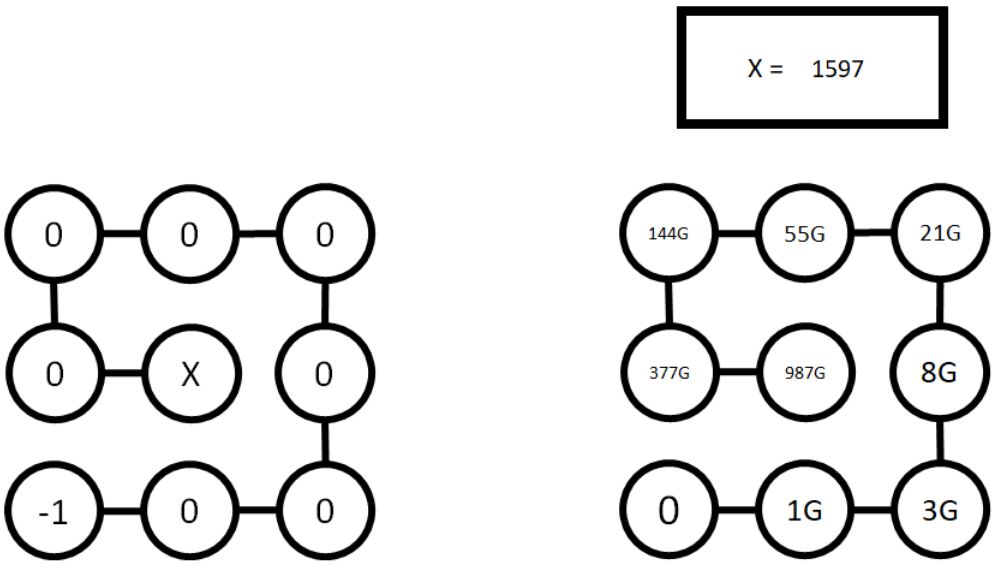
   Some of the digits of the clues fell off the puzzle. Clues that had one digit fall off but not the other are underlined so you can see which digit fell off. The digits that fell off consist of fourteen 1s, three 2s, one 4, and two numbers, each of which could be a 6 or a 9. It is your job to deduce whether the digits that look like 6s or 9s are 6s or 9s. Here is a useful hint: there are as many left-facing mirrors as there are right-facing mirrors in each row and column.



   Note to puzzle-graders: The boxes can be "flipped", replacing 3 with 4 and vice versa, and still be a viable solution.

2. Ultimate Penny Pushers: [*10 points*]

   In this puzzle, determine the smallest possible value of X such that this puzzle is solvable. Write your solution assuming that the value of X is that smallest possible value, and write the value of X in the black box.



3. Ultimate Logic: [*10 points*]

1. Five people went to lunch together. The people sat in a row, and each person ordered an entree and a drink. Determine the order in which the five people sat, as well as what they ordered and how much they paid for each item, with the following clues:
2. The prices of the entrees were \$2, \$3, \$5, \$7, and \$11.
3. The prices for the drinks were \$1, \$4, \$6, \$8, and \$9.
4. Grace paid \$11 for her meal.
5. Ankit ordered juice.
6. The person who ordered pizza paid \$4.
7. Justin sat in the leftmost seat.
8. The leftmost person paid exactly as much as the person who bought a cheeseburger. The leftmost person did not buy a cheeseburger.
9. The person who bought salad also bought milk.
10. The person who bought soda sat to the left of the person who bought a hot dog.
11. Clark bought tea.
12. Coffee is more expensive than a burrito.
13. The person who bought a salad sat between Grace and the person who bought tea.
14. Lloyd spent \$11.
15. The five people were Justin, the person who bought coffee, the person who bought pizza, the person who was in the second seat, and one of the two people who paid \$11 for their meals.
16. The person who sat in the third seat didn't buy milk, but he/she paid a different amount from the person sitting in the fourth seat.

Receipt	Receipt	Receipt
Customer Name: Justin	Customer Name: Ankit	Customer Name: Clark
Entree: Burrito \$7	Entree: Cheeseburger \$11	Entree: Pizza \$3
Drink: Soda \$8	Drink: Juice \$4	Drink: Tea \$1
Seat: Leftmost Seat	Seat: Second Seat	Seat: Middle Seat

Receipt	Receipt
Customer Name: Lloyd	Customer Name: Grace
Entree: Salad \$5	Entree: Hot Dog \$2
Drink: Milk \$6	Drink: Coffee \$9
Seat: Fourth Seat	Seat: Rightmost Seat