TWO BIKE RACE

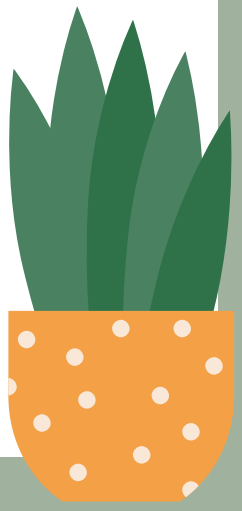
You have entered into a two-bike race from UNBC to Otway through the Greenway trail system of Cranbrook Hill. The race will require that you pick your own route from START to FINISH, and that you race on both roads and trails. As such, you must have two bikes for the race – a road bike and a mountain bike. However, you have no race support, so you will have to pick the bike you want to start with, and then leave your second bike at a checkpoint somewhere on your chosen race route.

You have been training for this race on both your mountain bike and your road bike and you know that:

- on your road bike you can travel 26 km/h on roads and11 km/h on trails.
- on your mountain bike you can travel 21 km/h on roads and 16 km/h on trails.

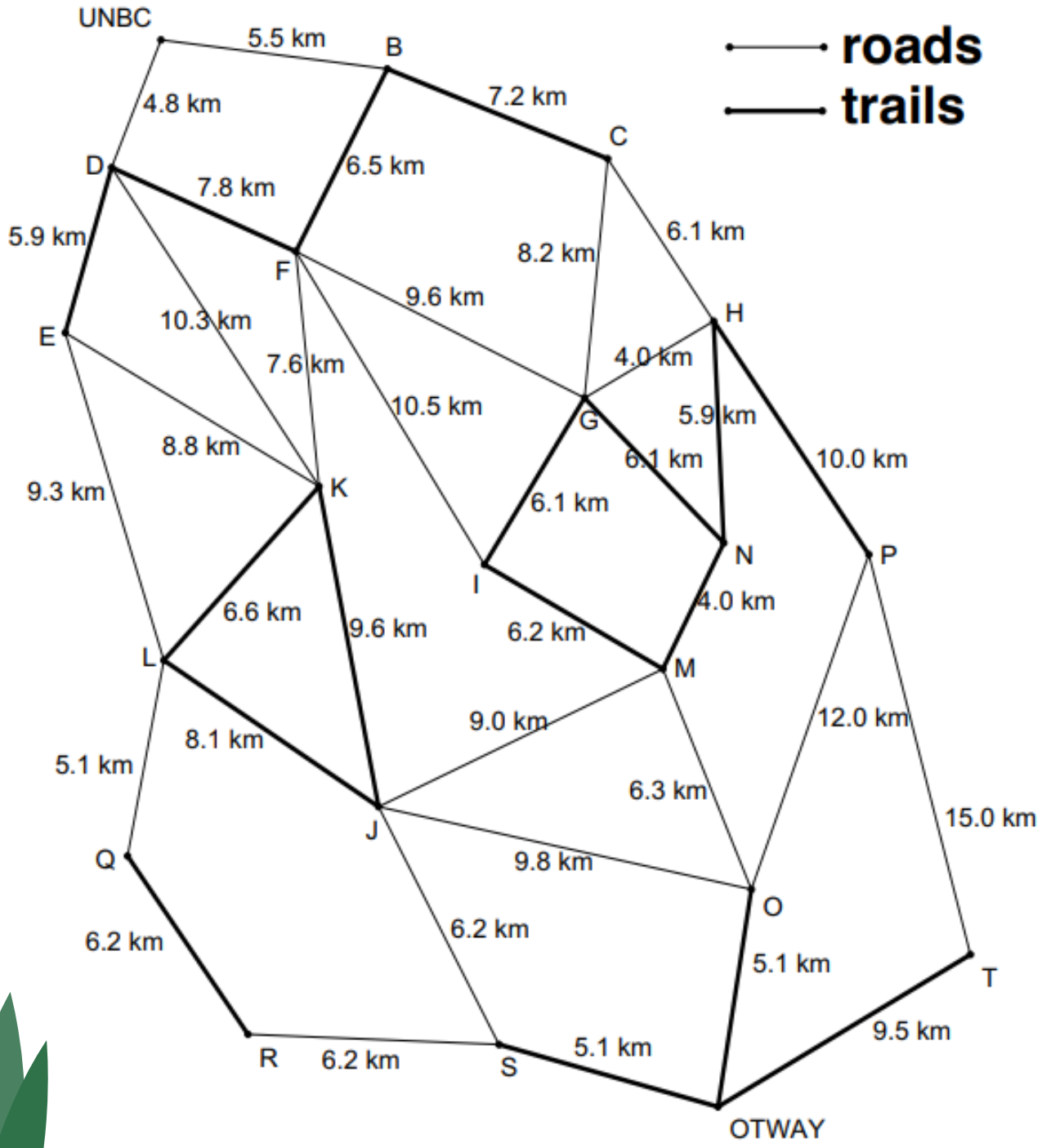
Determine what route you want to follow, which bike you want to start with, and at which checkpoint (indicated with letters B – T) on your chosen route you will leave your second bike. YOUR GOAL IS TO HAVE THE FASTEST TIME POSSIBLE.

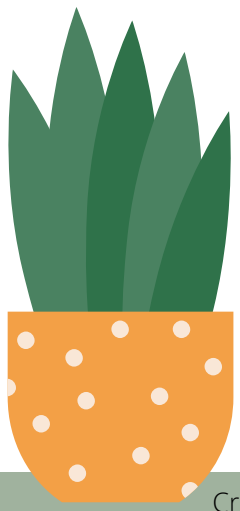
To help you with this decision you have been provided with the following checkpoint map (on the back).



Credit: Peter Liljedahl

TWO BIKE RACE





Credit: Peter Liljedahl

9 HOLE GOLF COURSE

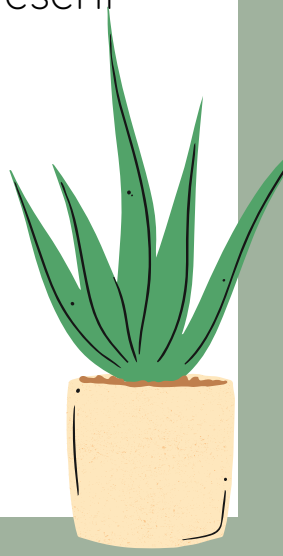
Prince George is getting a new 9-hole golf course, which is going to be built on a treed lot just outside of town. Your task is to come up with a layout for the golf course.

Here are a few things that the owners of the golf course would like you to keep in mind:

- must be two par-3 holes, five par-4 holes, and two par-5 holes
- a par-3 must be between 150 and 200 metres in length
- a par-4 must be between 250 and 400 metres in length
- a par-5 must be between 400 and 500 metres in length and must have a bend in it
- all fairways are between 75 and 100 metres wide
- must start and finish in the same place
- can never be two par-3 holes or two par-5 holes in a row
- pond in the middle of the property that you need to work around
- must include a clubhouse and a parking lot

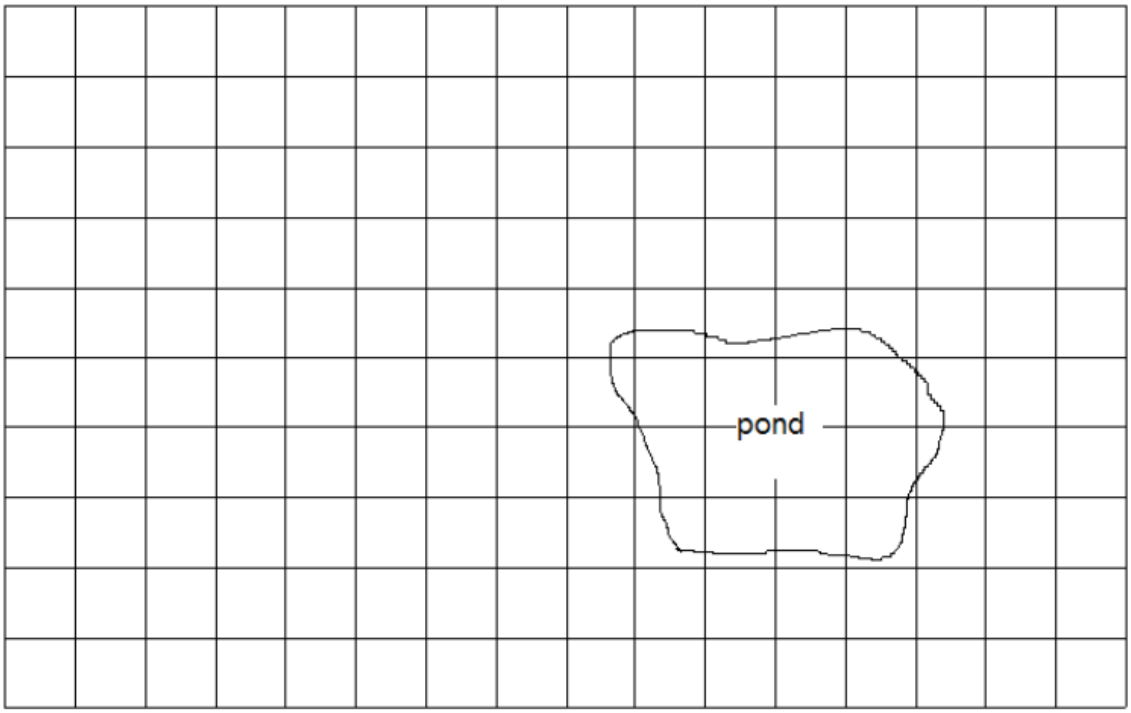
To help you with your design and layout you have been provided with a scaled map of the property (every square is 50m x 50m). Present your final design on a copy of this map.

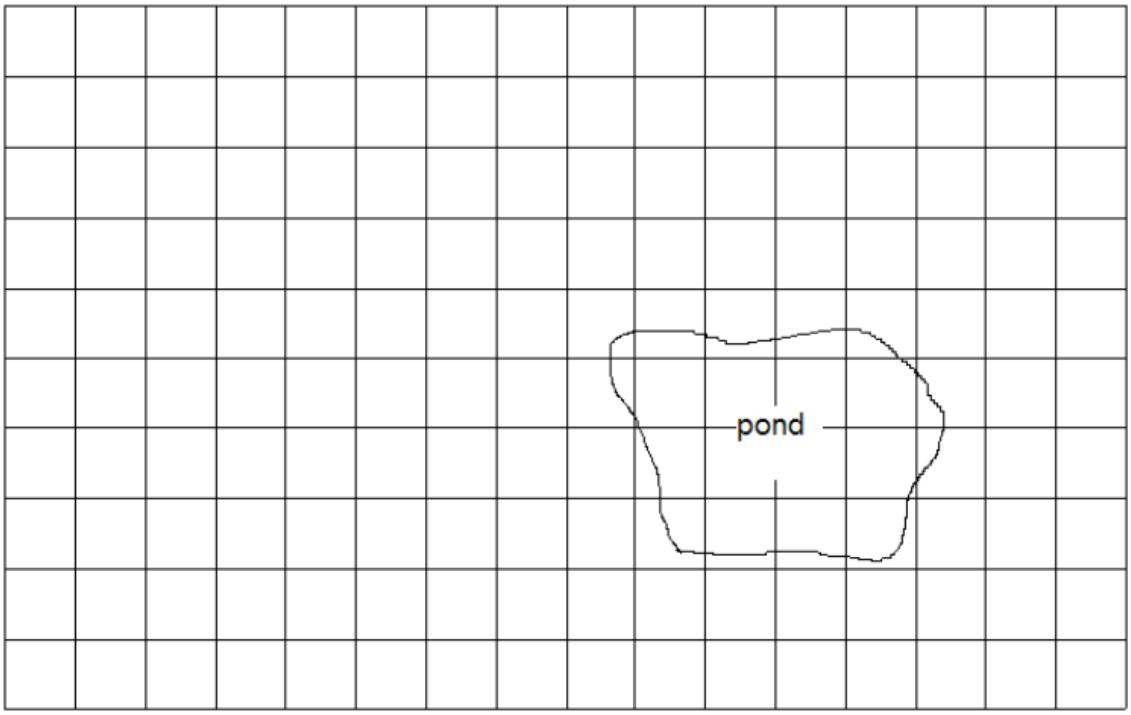
- number the holes
- indicate tee boxes with the letter T
- indicate greens with the letter G
- indicate trees that are going to be left with the letter X

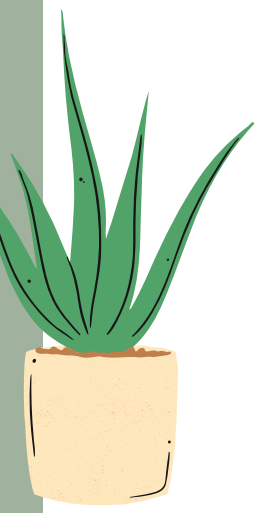


Credit: Peter Liljedahl

9 HOLE GOLF COURSE







Credit: Peter Liljedahl

WINTER OLYMPICS

Traditionally the final standings to determine the winning country at the Olympics are determined by the total number of medals won by each country. Many countries believe that this is not a FAIR system, and believe that a better way should be developed. Please decide on a NEW strategy for ranking the following countries from 1 – 12, with 1 being the best.

The following list represents the order of results from the 2006 Winter Olympics, held in Turin, Italy. The information in columns 6 and 7 may help develop a better ranking system. Keep in mind that ties are not allowed so you will have to have tie-breakers built into your system.

	GOLD	SILVER	BRONZE	Total Medals	# of athletes at the games	Population of the country
Germany	11	12	6	29	164	82,422,299
United States	9	9	7	25	211	298,444,215
Canada	7	10	7	24	196	32,654,500
Russia	8	6	8	22	178	142,893,540
Norway	2	8	9	19	81	4,610,820
Sweden	7	2	5	14	112	9,016,596
Switzerland	5	4	5	14	143	7,523,934
China	2	4	5	11	78	1,313,973,713
Italy	5	0	6	11	184	58,133,509
Korea	6	3	2	11	40	70,305,000
France	3	2	4	9	89	60,876,136
Australia	1	0	1	2	40	20,264,082

Your presentation to the International Olympic Committee must:

- Represent your rankings.
- Explain why you ranked the countries the way you did and what information you considered.
- Explain how you account for ties.
- Explain how your system is more FAIR than the system currently in place.

Credit: Peter Liljedahl

TRICKY 24

Can you find a solution to all 24 problems?

For each problem:

- You MUST use ALL the numbers 1,2,3 and 4.
- You may NOT repeat the 1,2,3 or 4.
- The numbers 1,2,3, and 4 do NOT need to be in consecutive order.
- You may use addition, subtraction, multiplication or division as many times as you would like.
- Parenthesis, Exponents, Square roots, and Fraction bars ARE allowed.

There ARE multiple solutions to EACH problem!

Examples:

10 = 1 + 3 + 2 + 4

10 = (4*2) + (3–1)

10 = 32 + 14

1 =	**9 =**	**17 =**
2 =	**10 =**	**18 =**
3 =	**11 =**	**19 =**
4 =	**12 =**	**20 =**
5 =	**13 =**	**21 =**
6 =	**14 =**	**22 =**
7 =	**15 =**	**23 =**
8 =	**16 =**	**24 =**

Credit: Jamie Riggs

INTEGER SOLITAIRE

TASK INSTRUCTIONS

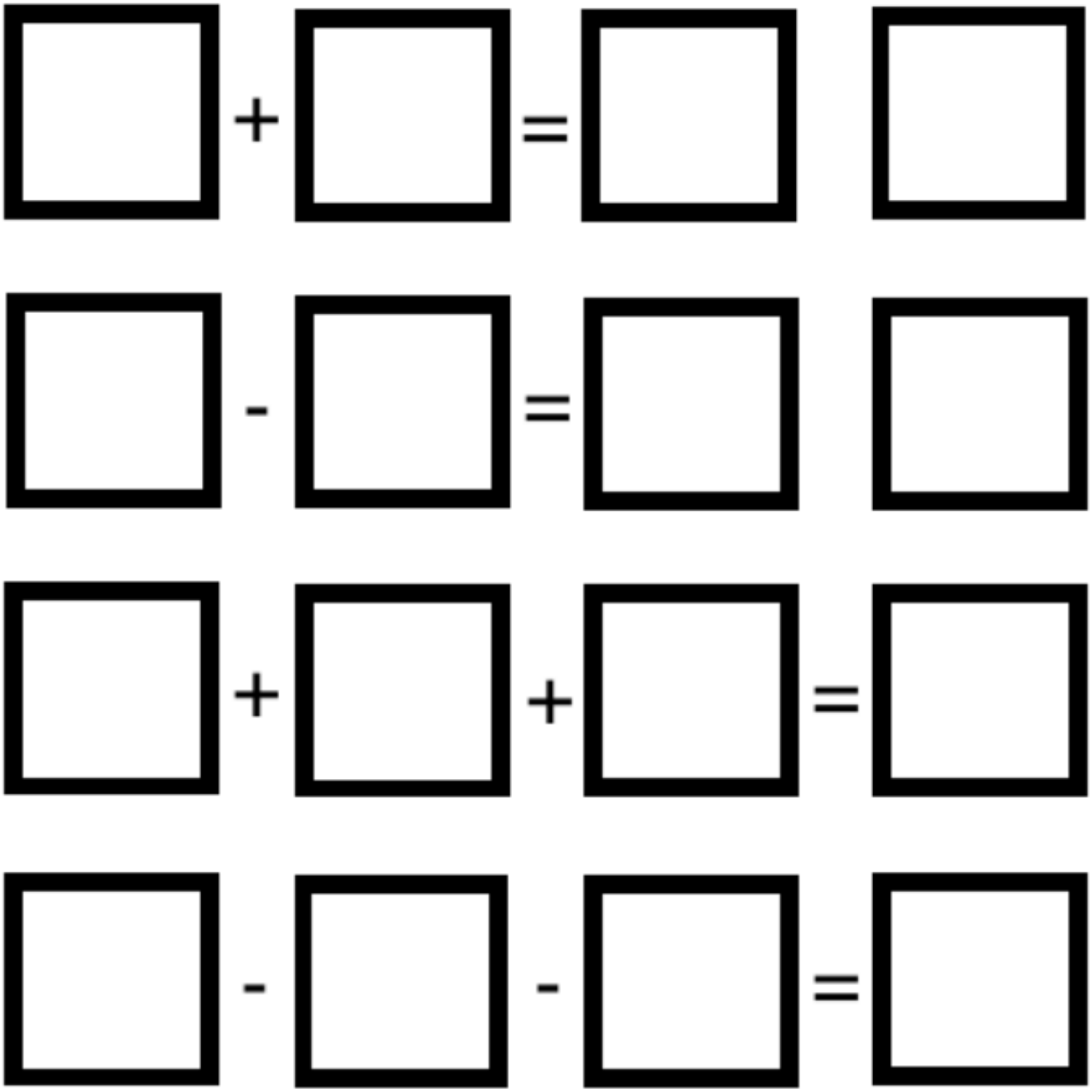
Integer solitaire can be played alone or in pairs. Students are dealt 18 playing cards at random.

Black cards are positive and red cards are negative; aces = 1, jacks = 11, queens = 12, kings = 13, and each numbered card's value is as expected.

The object of the game is to place a card in every space on the board so that all equalities are true. Because the cards are not in fixed positions, students are not committed to the equalities they create and can rearrange them as needed.

As they work to solve their puzzles students try out multiple addition and subtraction problems in order to be able to satisfy all four equalities with their limited sets of cards. After all four equalities are satisfied, a new set of cards can be dealt to the players. Students will finish at different speeds, so it is best for the teacher to set a time limit for the activity and challenge students to see how many times they can be successful.

INTEGER SOLITAIRE



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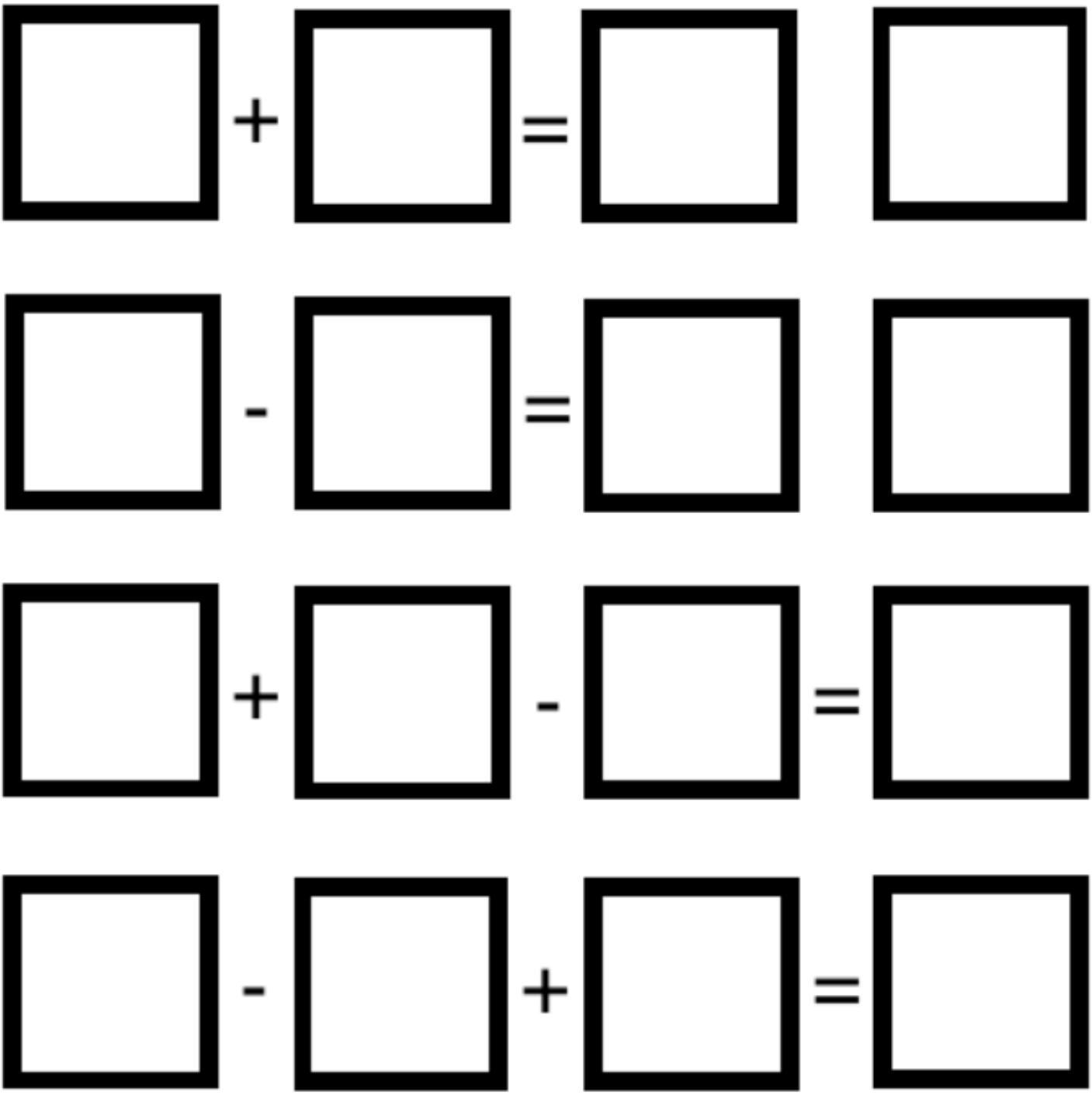

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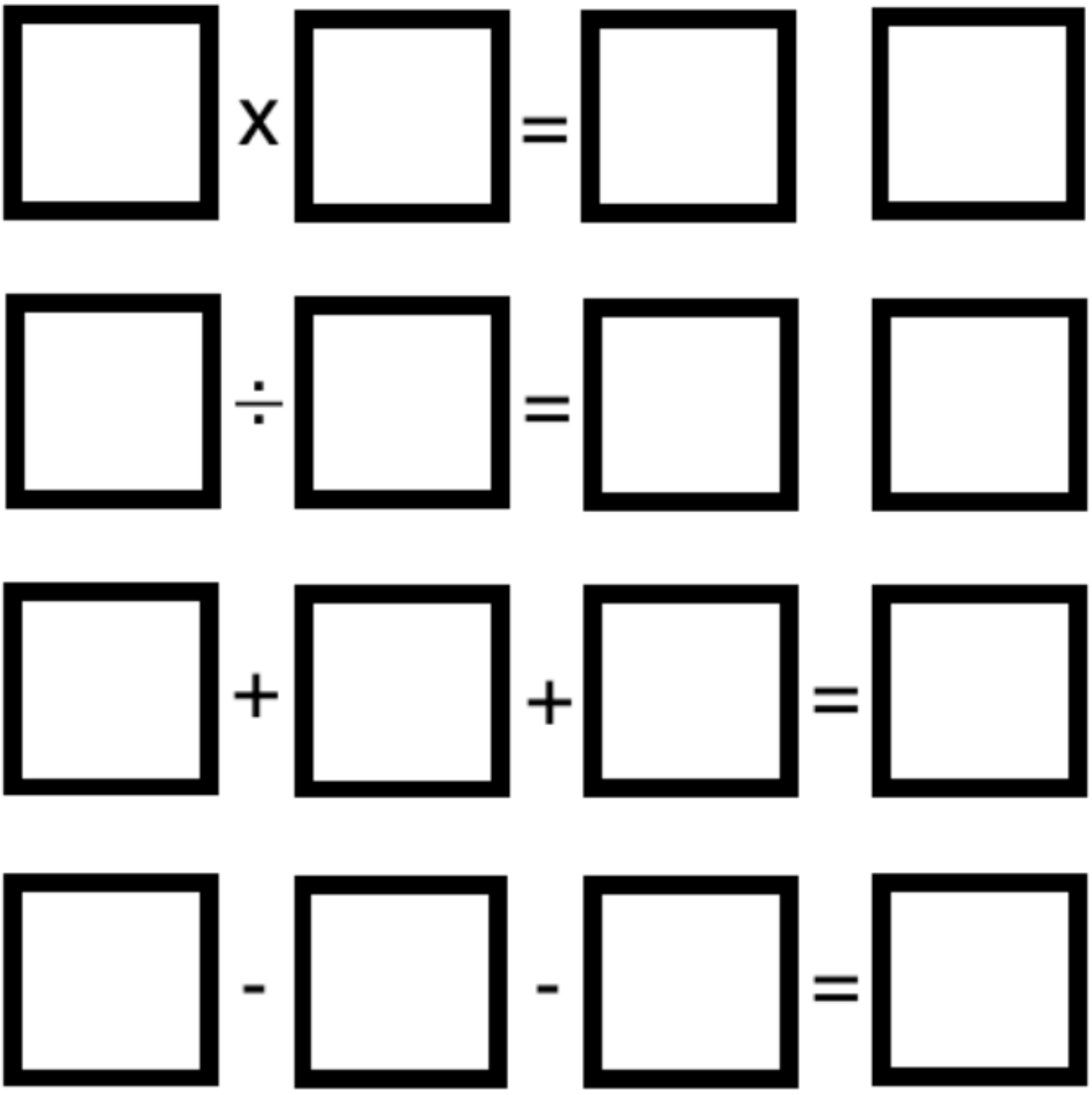

INTEGER SOLITAIRE