

Music for Loudspeakers and Large Open Space

For Laptopist, Co-ordinator and a Maximum Audience of 20 per Performance

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This piece aims to underline the importance of hearing in defining our experience of the world around us by exploring a way in which our physical location in space may be defined sonically. Four loudspeakers placed at the corners of a one-hundred by one-hundred meter square surround the audience members, emitting a constant constant quaver pulse, with each speaker emitting a distinct sound. The ground inside the square is marked with a grid, consisting of eighty-one equally spaced points, each with a distinct set of four distances from each loudspeaker. Audience members are instructed to move from marker to marker in a choreographed manner, constantly changing their distance from each speaker and therefore the time that it takes each sound to reach them and the intensity with which it does so. Each movement made by an audience member is experienced as the subtle morphing of a polyrhythm. The choice of choreographed pattern defines the rhythmic pattern that an audience member will hear. Each new pattern executed is reframed by varying pitch and tempo.

Setup

This piece requires a 'co-ordinator', a laptop operator, and is written for a maximum audience of 20 for each performance.

Conditions

The piece must be set up in a large open space which is more or less completely flat. Ideally there should be no large reflective surfaces which may alter the intended listening experience. Examples of appropriate spaces might be sports pitches, large parks, flat urban wasteland or airfields.

This piece assumes that weather conditions are appropriately dry for the setup of electrical equipment, or if not, that adequate precaution is taken.

Equipment

4 large high quality loudspeakers (such as Mackie srm450)
4 loudspeaker stands

Either

3 x 20m jack to xlr cables

4x 100m xlr jack to cables

Or

4 x wireless audio receiver and transmitter sets

1 x 250m power lead (or sufficient leads to this effect)

2 x 150 power leads (or sufficient leads to this effect)

1 x 20m power lead

Power splitter

Laptop capable of running Max/MSP runtime files

Audio interface (compatible with laptop) with four line outputs

Power supply for laptop

Headphones

Laser distance measure (capable of achieving 1cm accuracy at 100m)

Cross line laser measure

Spirit level

Impermanent marker paint

Brightly coloured plastic cones or markers (80)

Large marker for centre point

Sound level meter (the most accurate available)

Labelling for monitors

Suggested method

Setup should be completed as per the diagram on page 4. Ideally, measurements should be made with the help of an expert to achieve maximum accuracy.

Use the laser distance measure and cross line laser measure to measure the initial distances and angles for the perimeter square, placing markers at each corner. Following this, mark 10m intervals along each vertice with the spray paint. Create lateral vertices at these points with the tape measure and mark 10m interval grid points. Strive for the greatest accuracy possible at all times. When initial distances have been measured, they may be cross-checked from the location at which speaker 1 is placed, using the distances given on p.4 and the laser measure. If distances are correct, place markers on these points and fix to the ground. The centre of each marker should correspond to the measured point. Markers should be fixed to grass surfaces with pegs, whilst on concrete they should be weighted or glued. If rhythms are not matched at the centre point, then measurements have been completed incorrectly and must be readdressed.

Install speakers at corners of the perimeter of the main square so that they face into the centre marker at a 45 degree angle (this can be verified with the laser measure). The cone should be directly above the corner of the perimeter square and the bottom of the speaker should be adjusted to 1.75m above the ground. Outputs, 1, 2, 3 and 4 on the interface should be connected to speakers 1, 2, 3 and 4 respectively. Power should be supplied to all four speakers and laptop. Check that speakers are completely level with a spirit level. Cables should be run around the perimeter of the square so as not to obstruct the pathways of audience members. Speakers should be marked clearly in order for them to be distinguished from one another by audience members. The information on page five should either be clearly displayed or given to each audience member before performances.

Sound Check

When setup is complete, a sound check must be carried out. Make sure the gain of each speaker is set to the same level. Start the max patch (follow instructions inside the patch). The patch operator should raise gain of speakers at slowest tempo, whilst the co-ordinator uses sound level meter to check sound levels. Levels should not be uncomfortably loud at a distance of 14.1m, but should also be clearly heard at centre point (aim for an intensity of +/-100dB at 14.1m). When a good level is established, the message boxes triggering the increase of loudspeaker gain should be altered to take this into account.

Instructions for Co-ordinator and Max-patch operator

Before each performance

The co-ordinator should give audience members sufficient time to read the material on p.5 (this should have either been displayed or given to each audience member). Following this, packs of cards containing patterns should be handed out, and the co-ordinator should ask audience members to select nine each. After allowing c.5', the co-ordinator should invite the audience onto the grid to find their starting positions.

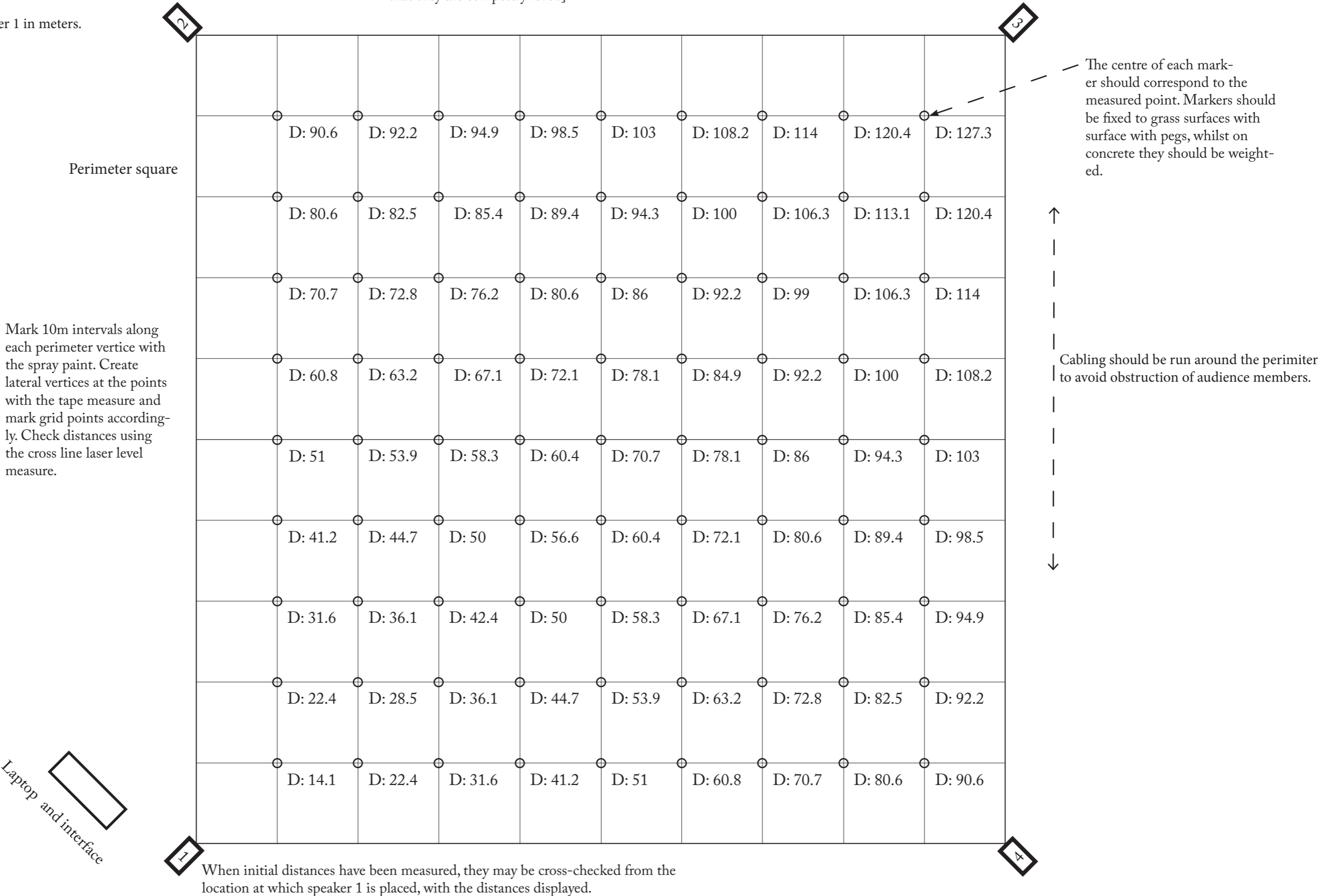
During each performance

The max patch operator should fade the patch in when the audience have settled to their starting positions. When the final member of the audience stops after completing each pattern, the tempo should be adjusted (ascending order). After the ninth and final pattern is complete, the patch should be faded out and the co-ordinator should make it clear when the piece has ended. Neither the co-ordinator or max patch operator should answer any questions about the piece.

Piece Setup Diagram

[Speakers clearly labelled and placed over edges of square at 45 degrees (facing into centre point) and 1.75m above ground level. Ensure that they are completely level.]

Key:
D: Distance from speaker 1 in meters.



Instructions for Audience Members

Overview

This piece aims to underline the importance of hearing in defining our experience of the world around us by exploring a way in which our physical location in space may be defined sonically. Four loudspeakers placed at the corners of a one-hundred by one-hundred meter square surround the audience members, emitting a constant constant quaver pulse, with each speaker emitting a distinct sound. The ground inside the square is marked with a grid, consisting of eighty-one equally spaced points, each with a distinct set of four distances from each loudspeaker. Audience members are instructed to move from marker to marker in a choreographed manner, constantly changing their distance from each speaker and therefore the time that it takes each sound to reach them and the intensity with which it does so. Each movement made by an audience member is experienced as the subtle morphing of a polyrhythm. The choice of choreographed pattern defines the rhythmic pattern that an audience member will hear. Each new pattern executed is reframed by varying pitch and tempo.

Instructions

Each audience member will be given a set of choreographed patterns of movement. Choose nine of them. The only constriction regarding pattern choice is that you must complete at least one pattern from each category (A, B and C).

Over the course of the piece you will hear nine sets of pitches and tempi, for each of which you must complete one choreographed pattern.

When invited, take up the starting position of your first pattern on the grid. Always face the direction in which you are about to travel.

When the speakers begin to emit sound, the first pattern should be executed. When all members have completed their first pattern, the pitches and tempo will change and audience members should complete their second pattern. This will be repeated until all members have completed nine patterns. If you complete a pattern before other audience members, hold your position until everybody has finished and the sound changes.

When the ninth pattern has been completed, remain at you location until the sound fades.

Try to stand with you head over the middle of each marker.

If there are two people to a marker, stand as close to the marker as is comfortable.

If a pathway is obstructed by another audience member, execute the pattern as closely as is comfortable.

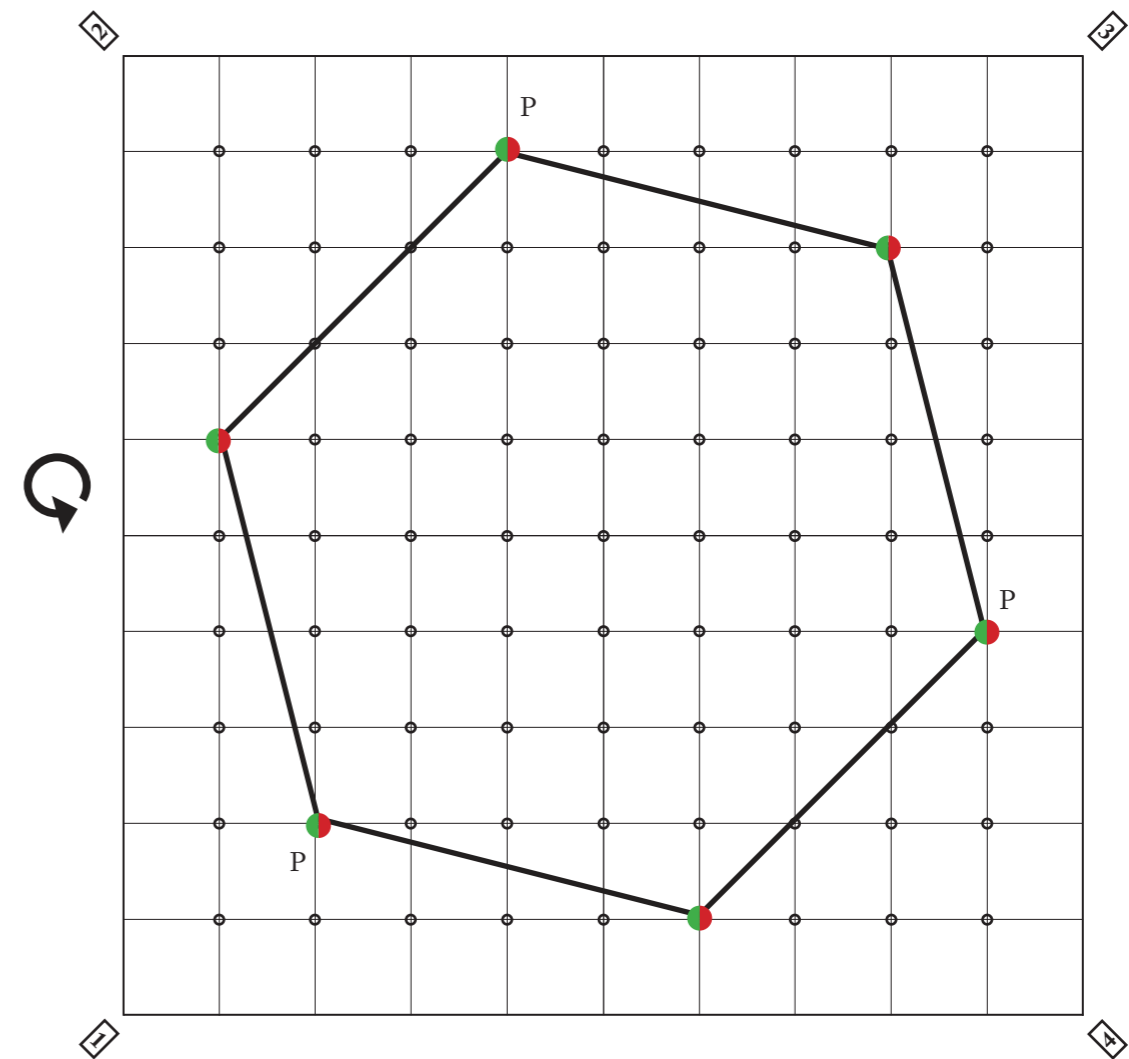
Throughout the course of the piece, prioitise focusing on sound over movement:

Listen for the gradual changing of rhythms.


Consider how movement affects sound.

Consider how patterns relate to the changing sound.

Notice how the intensity varies between each speaker as you move.



Notation

 Denotes a location where a pattern may commence or end.

P Pause. Stop at the marker that this symbol applies to for c.a.3"



Completion of the patterns that this symbol applies to are achieved by completing one full journey around the shape, finishing where the pattern was commenced.



Denotes the route of the pattern.

AO

'Any Order'. Audience members should progress up and down ALL arms of star-shaped patterns in any order to complete a pattern that this symbol applies to



Where this symbol is present, audience members should progress up to the end of the marked route and return to their original position.

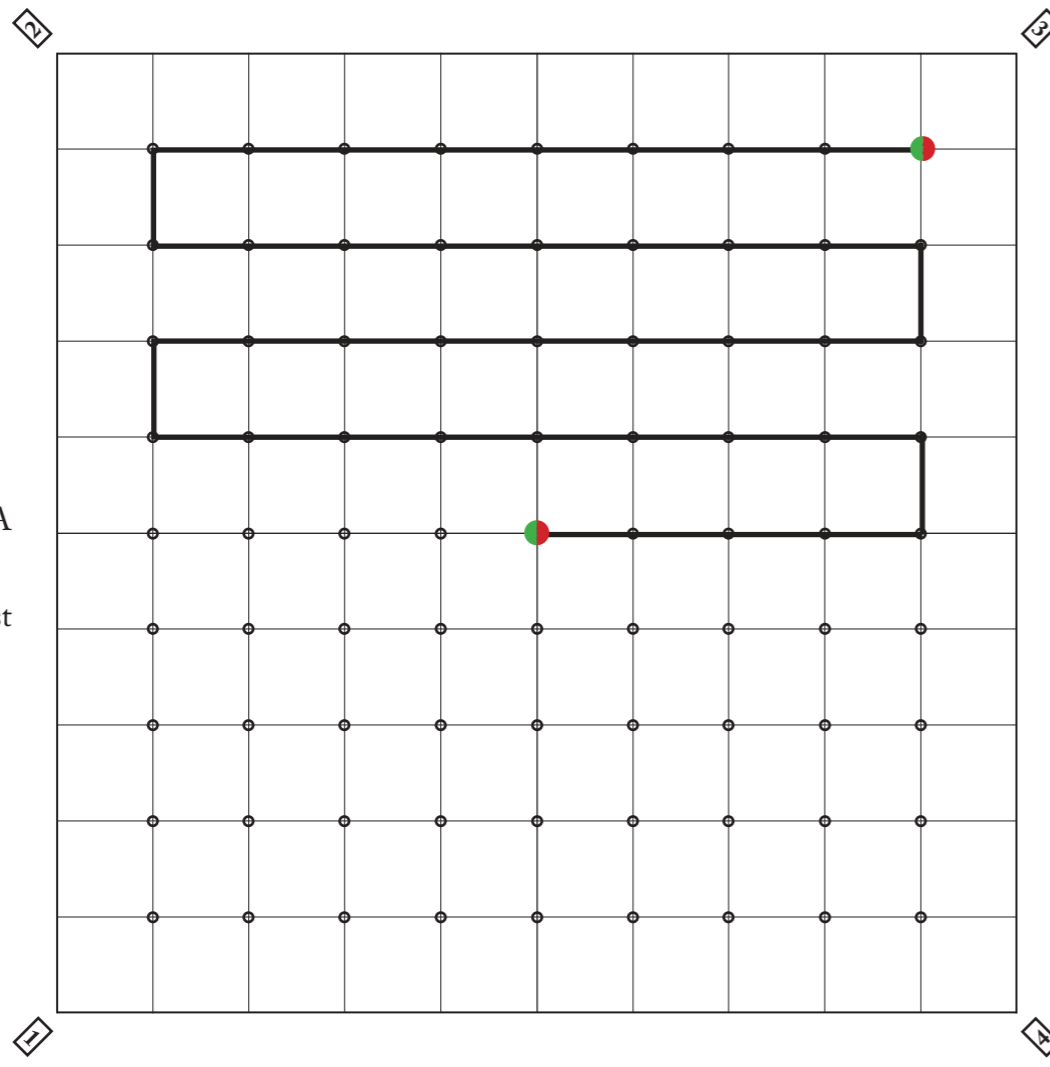
The series of numbers and letters to the left of each pattern states the category, set and number of a specific pattern. Text below this describes the rough walking pace that should be adopted for a specific pattern - medium fast: c.a. 2 steps per second (sps), medium: c.a. 1 sps, slow c.a. 0.5 sps, very slow 1 step per 5 seconds.

Patterns of Movement

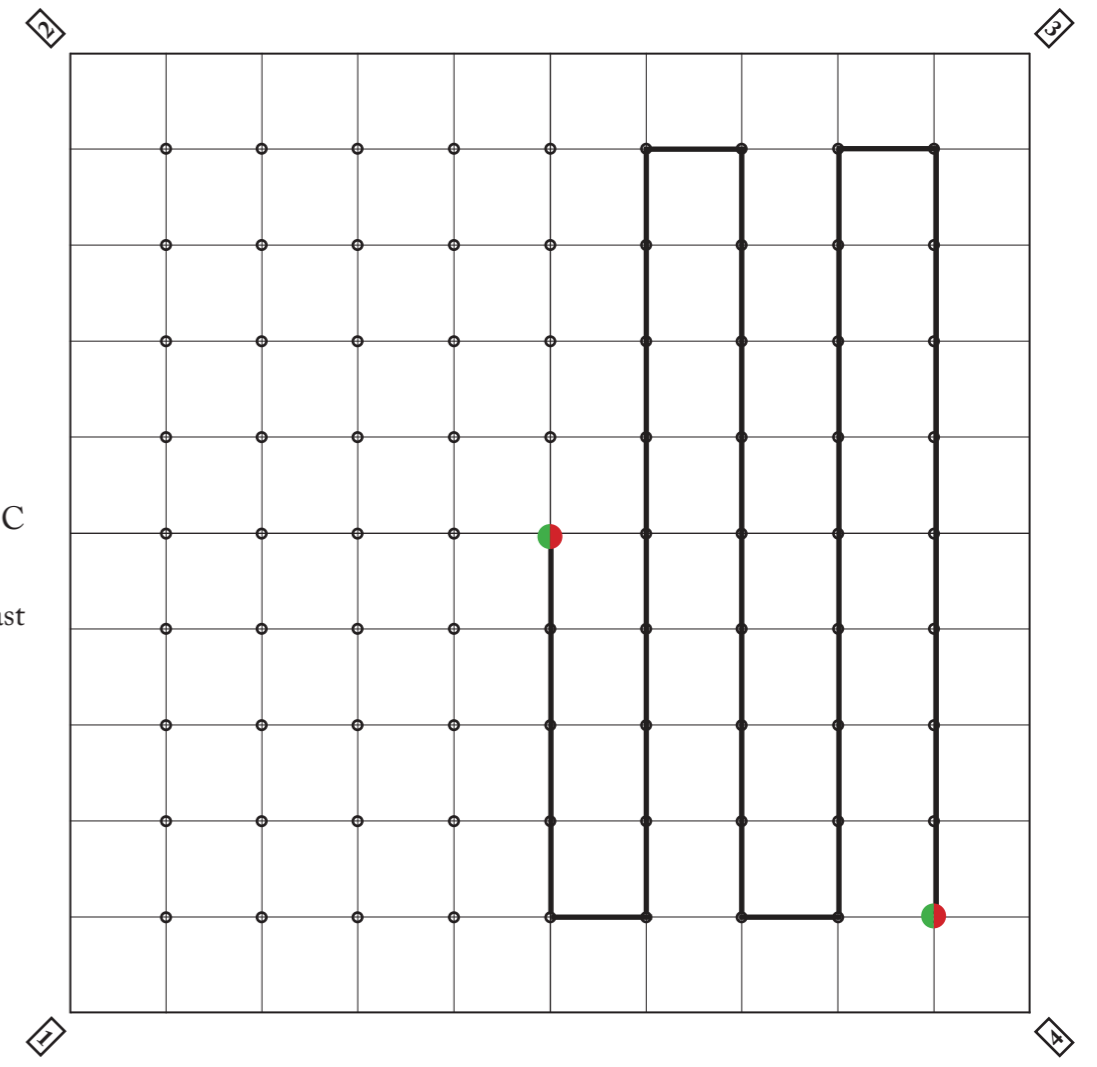
N.B. For performance, these would be presented as a set of cards, however here they are presented on paper

Section A

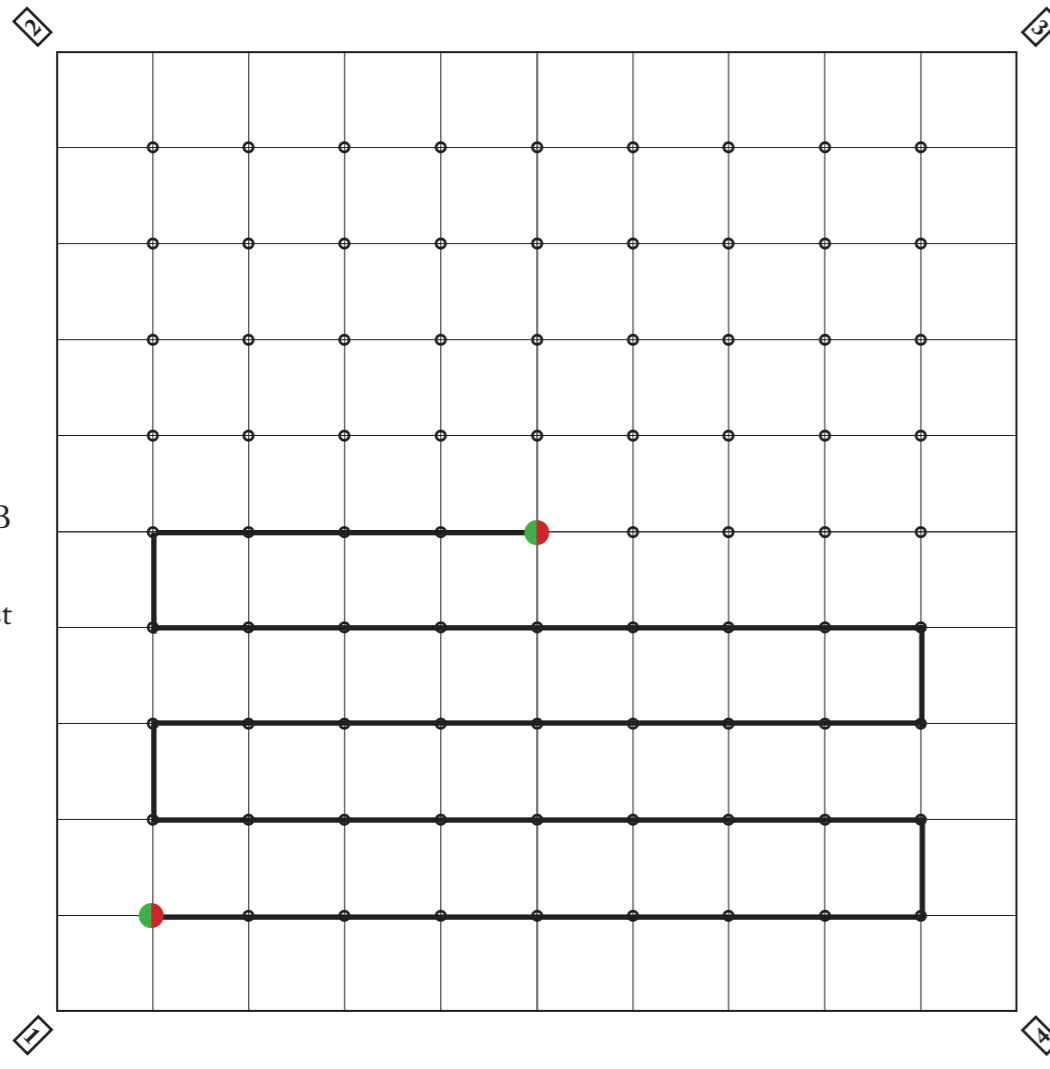
A - 1 - A
Medium Fast



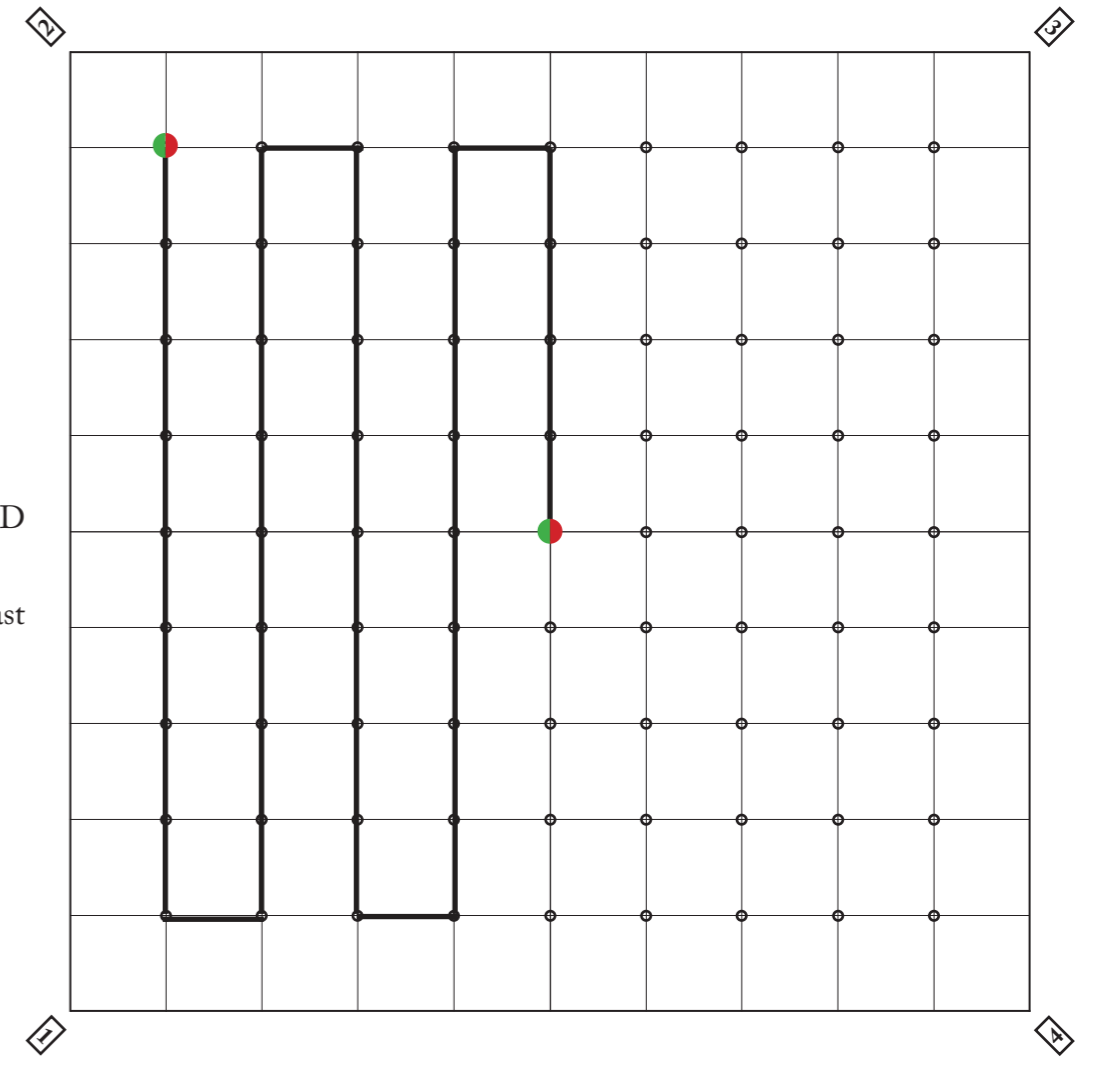
A - 1 - C
Medium Fast

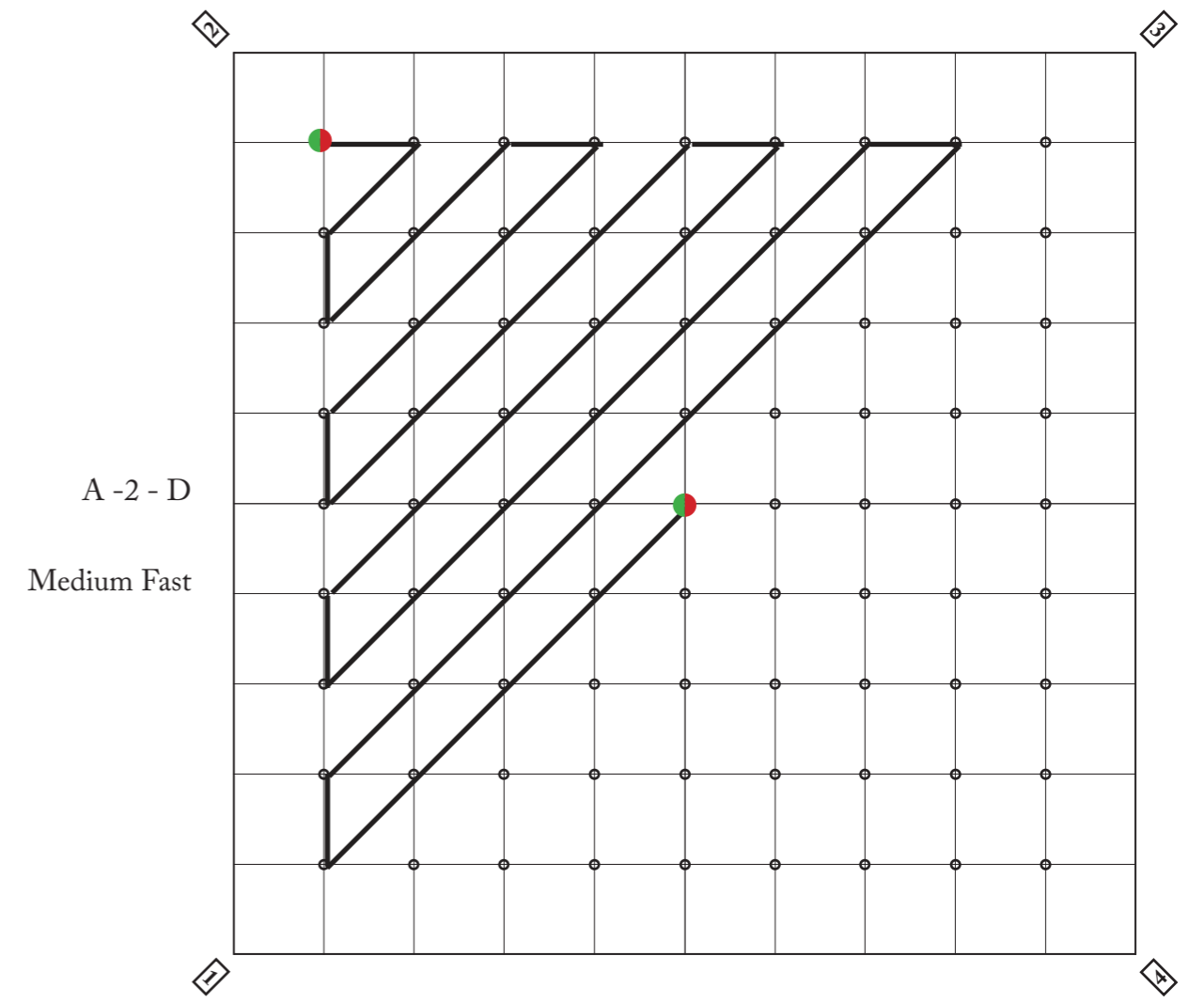
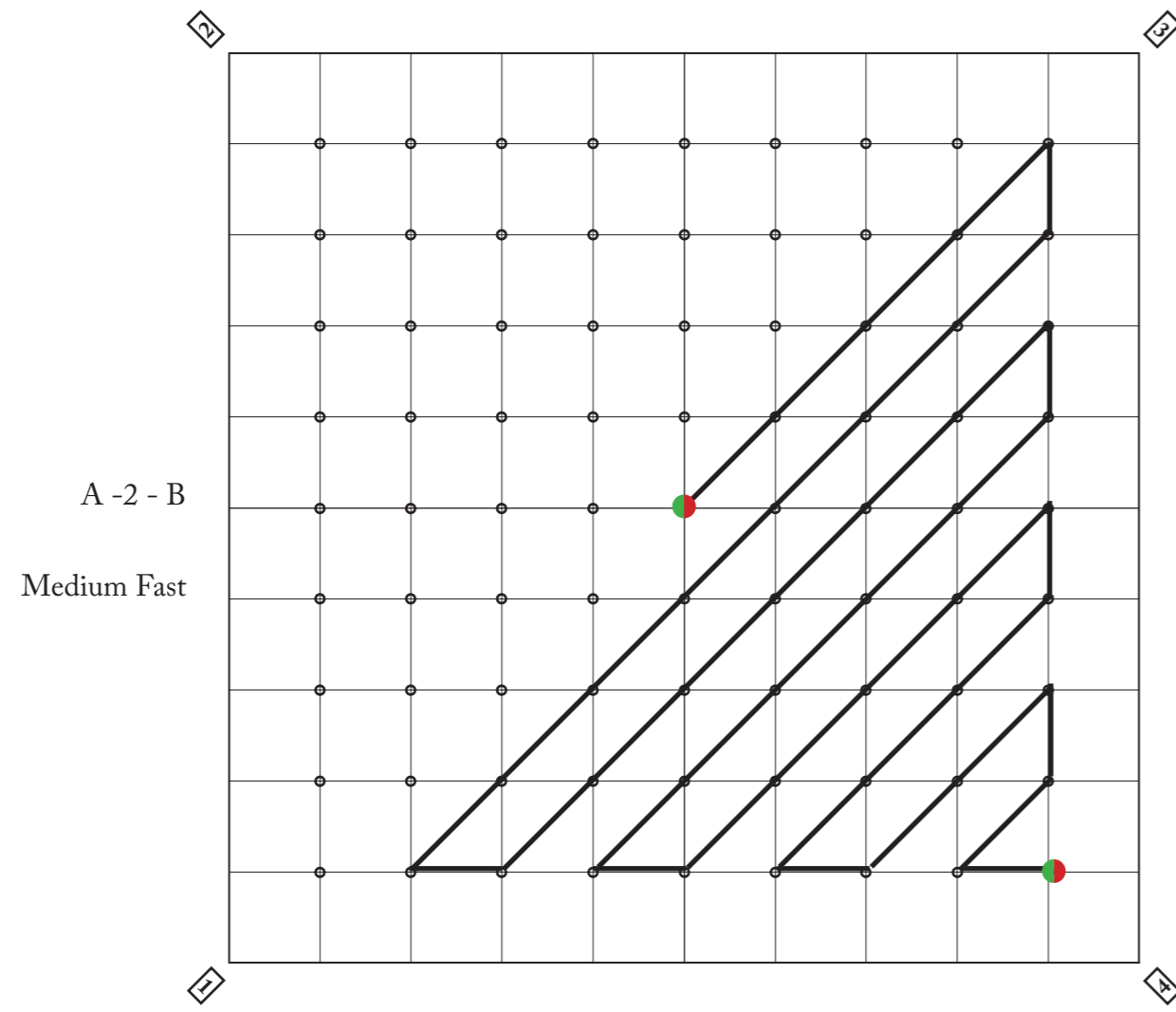
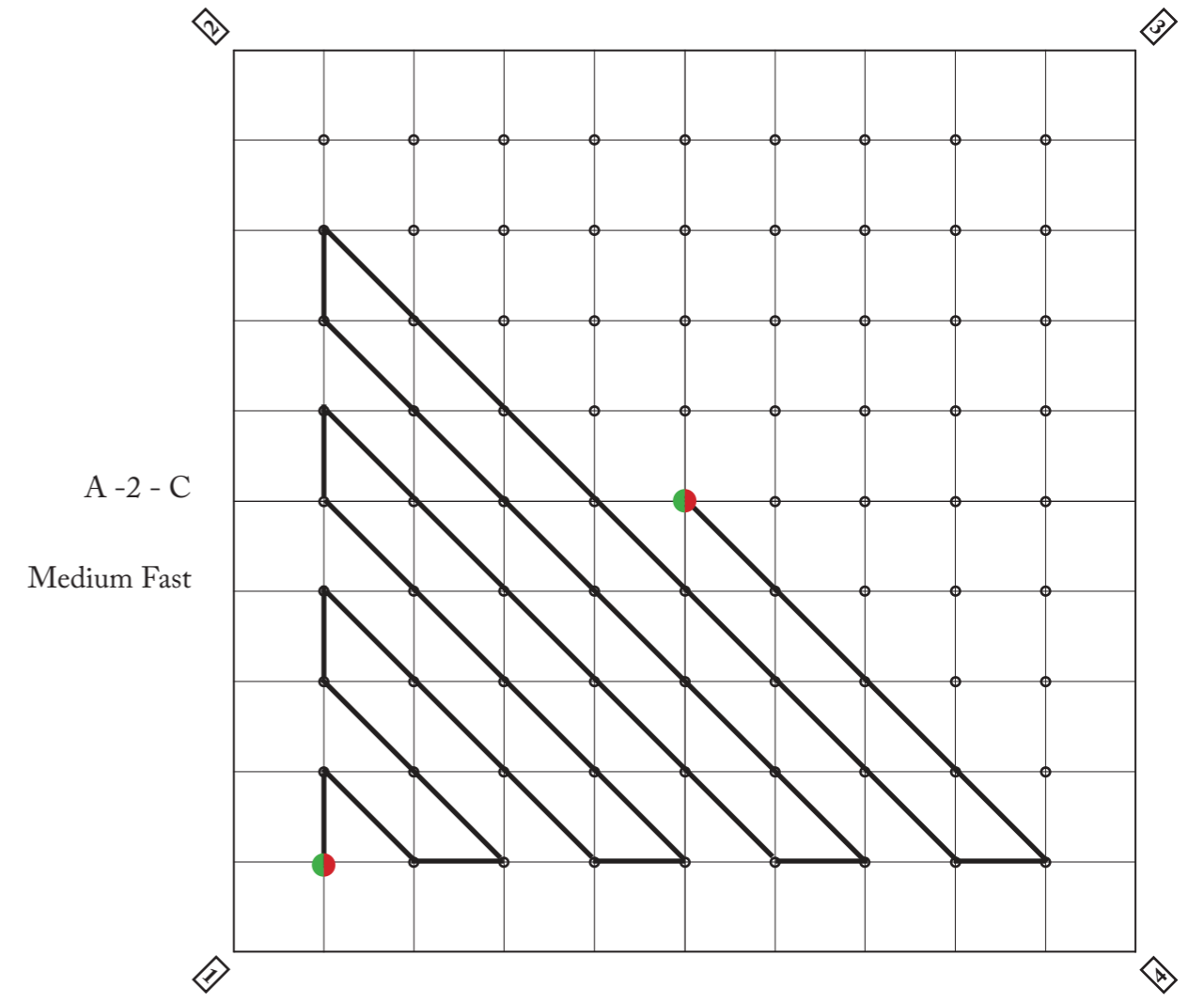
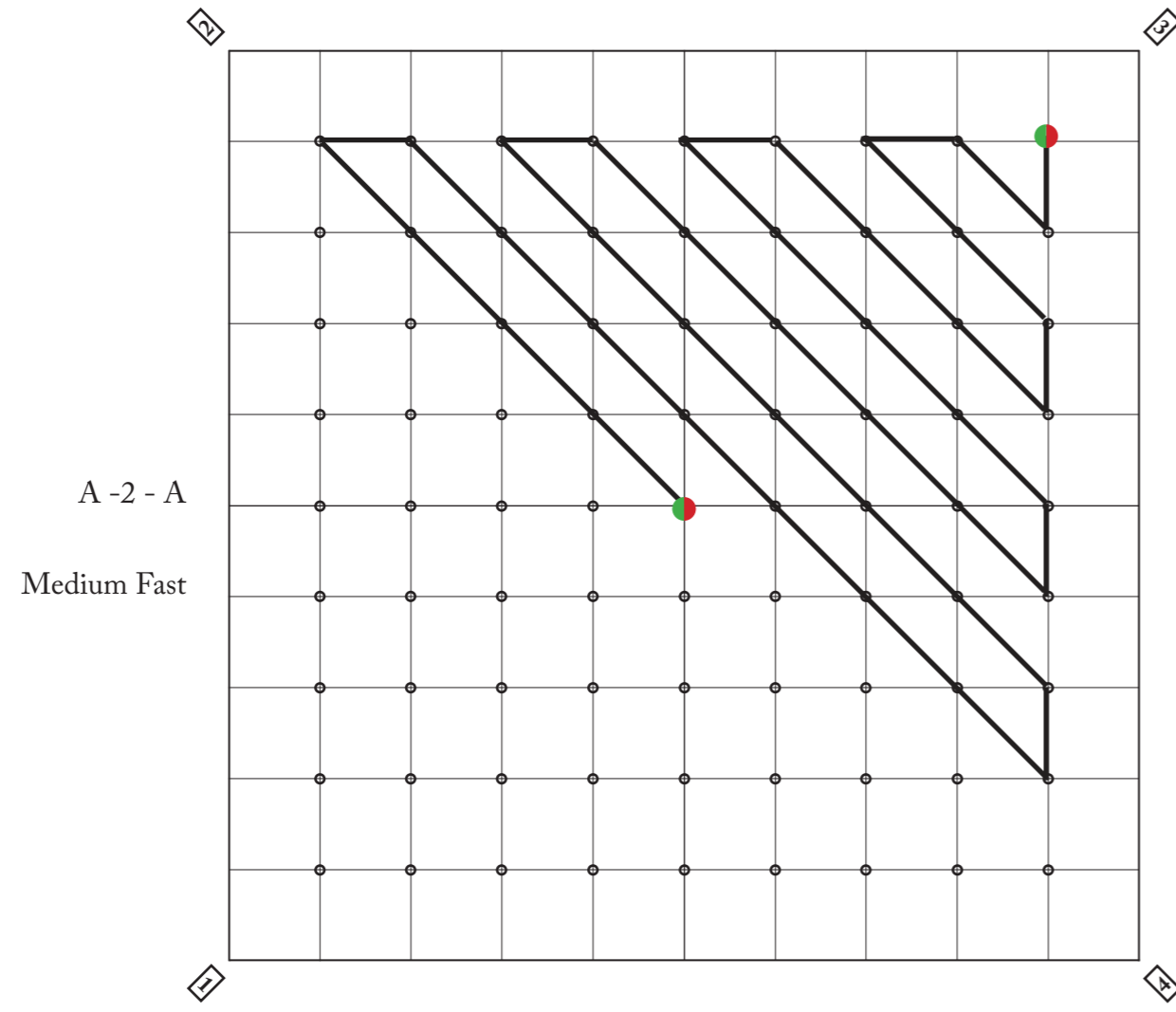


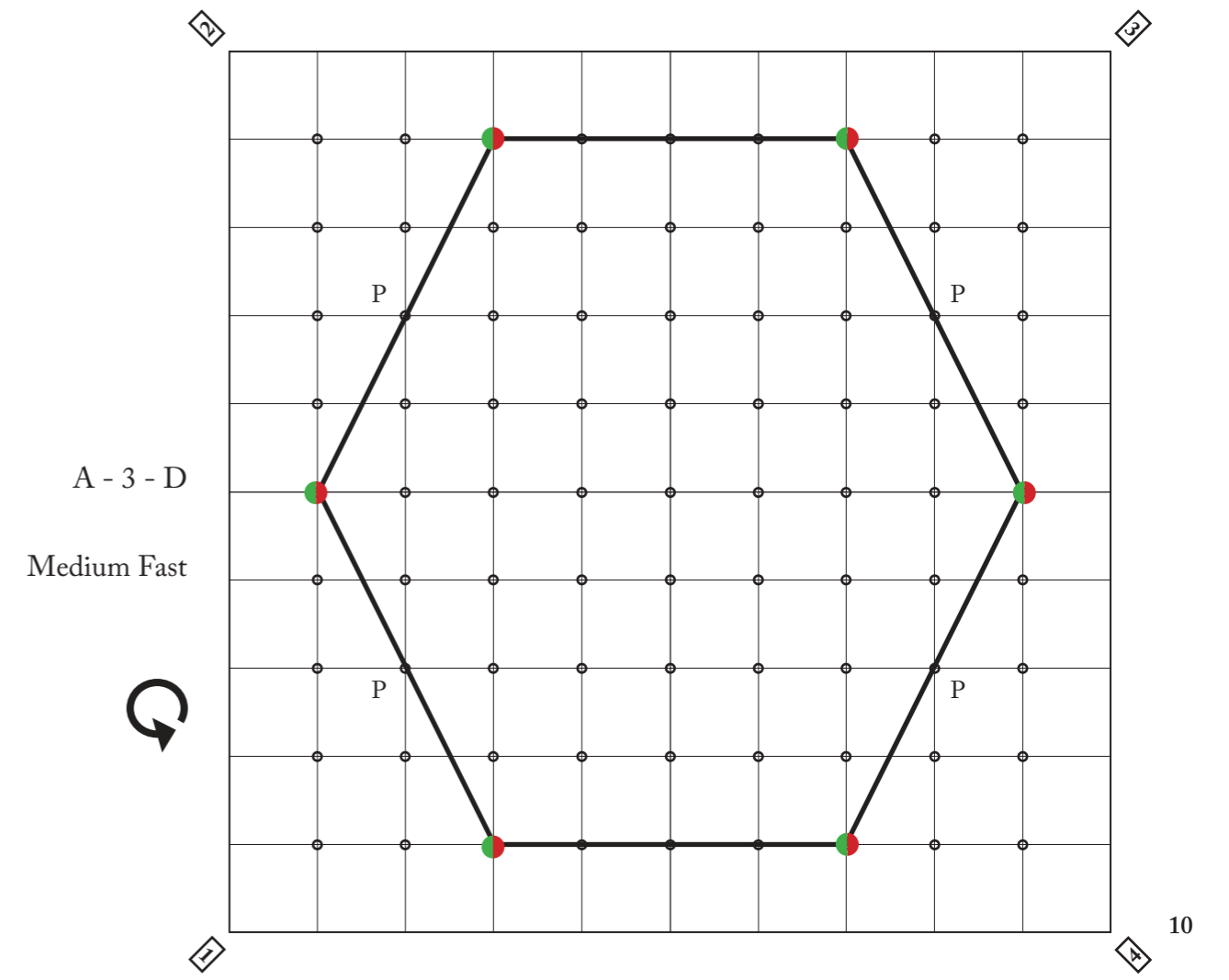
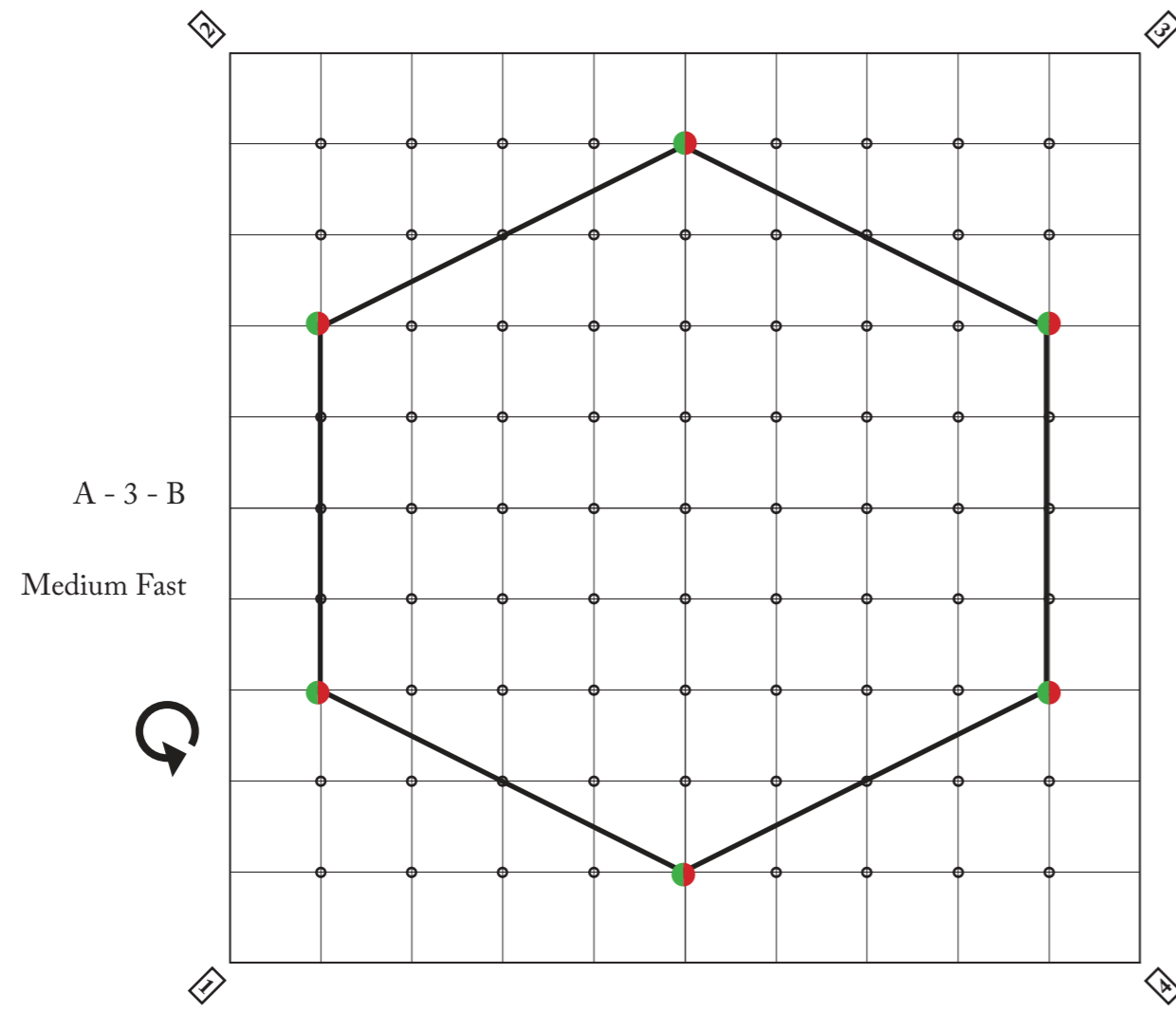
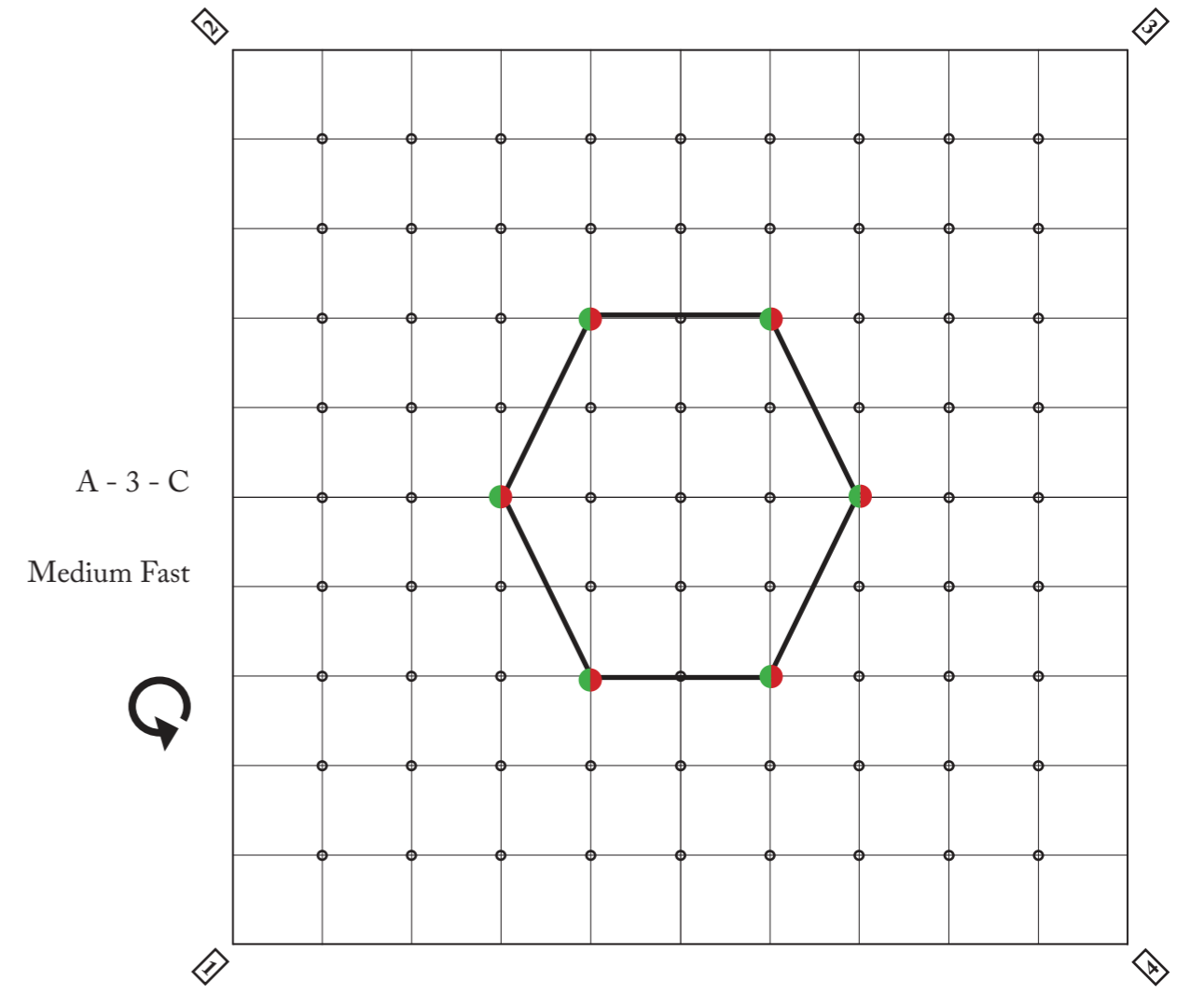
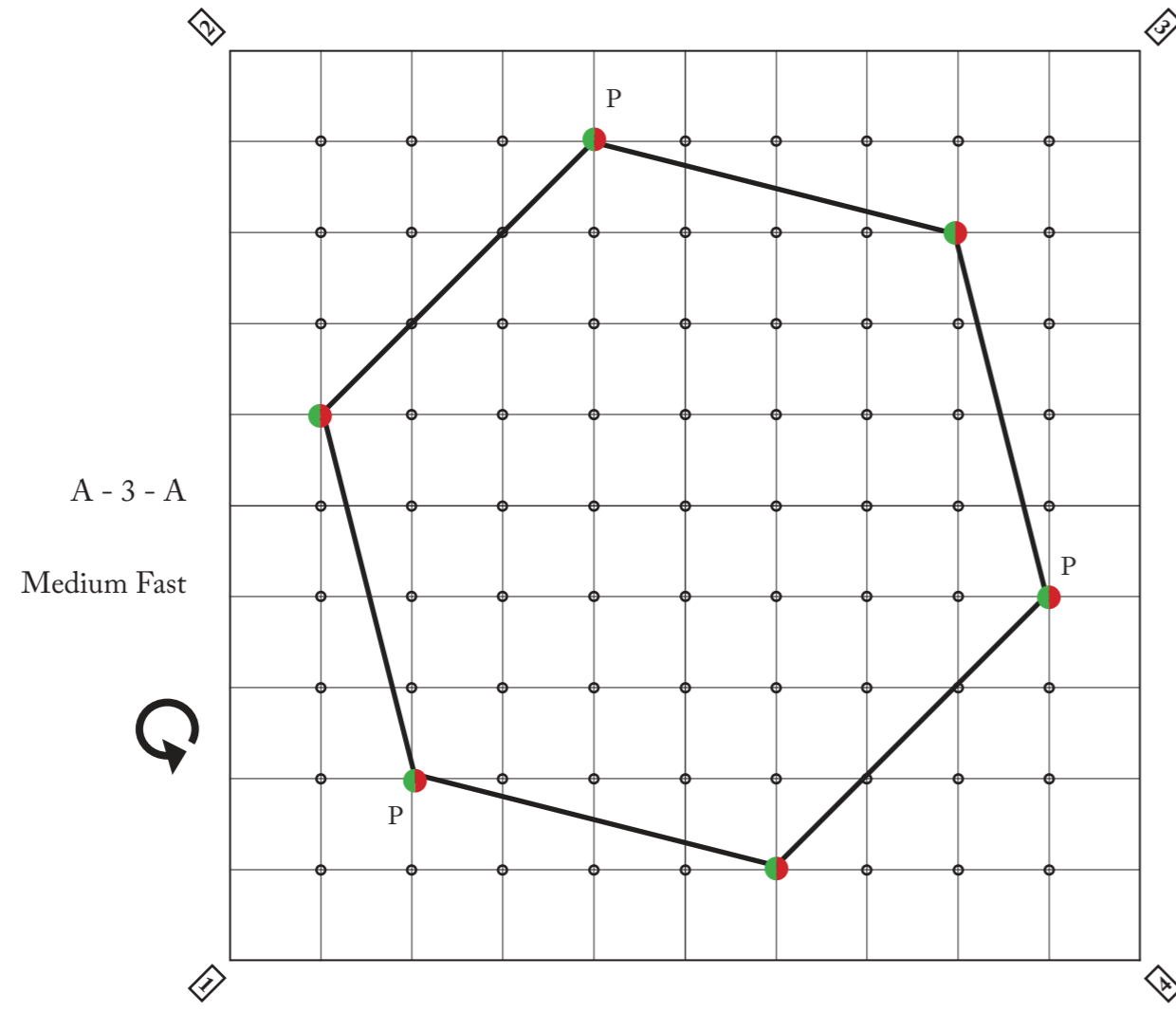
A - 1 - B
Medium Fast

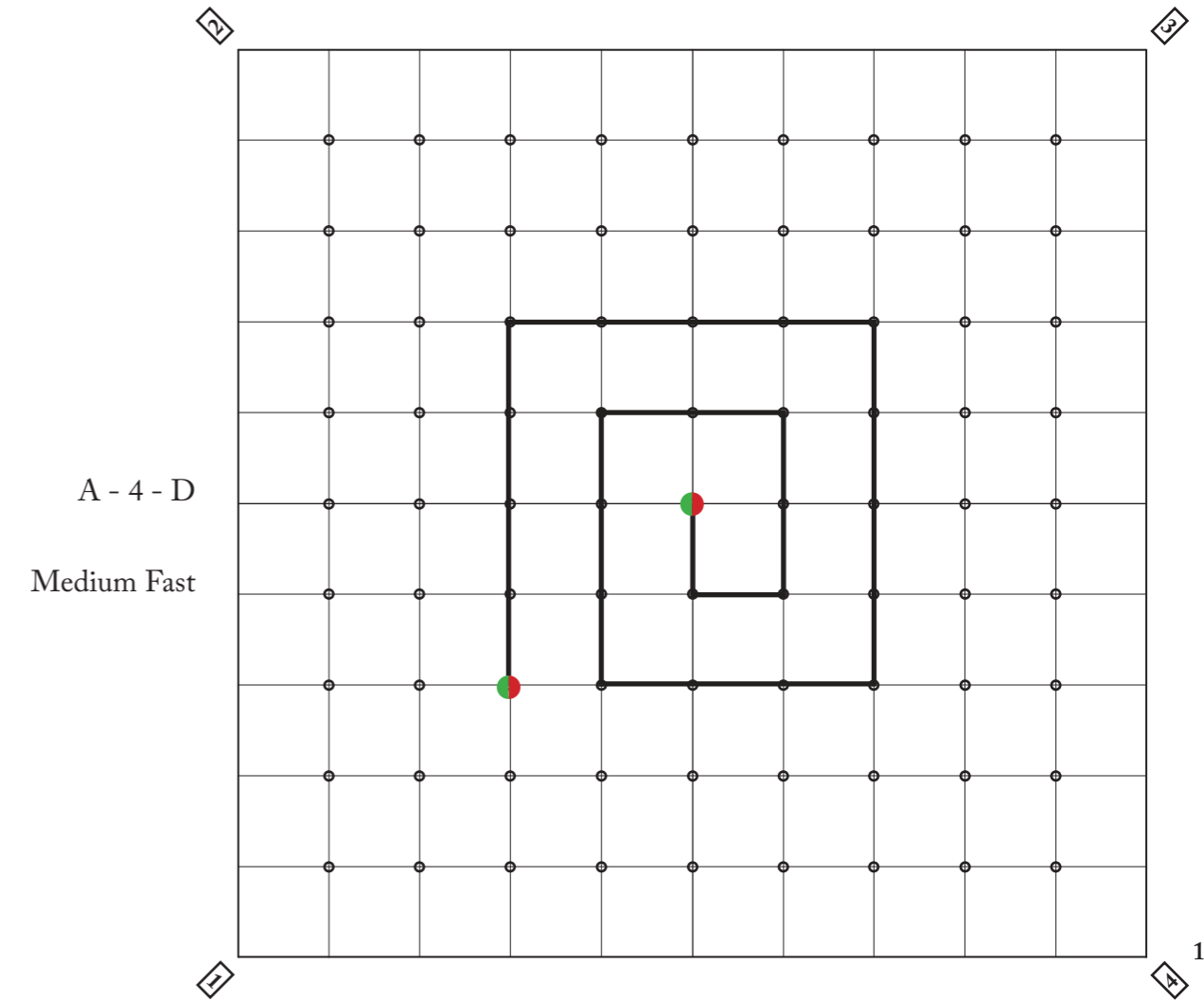
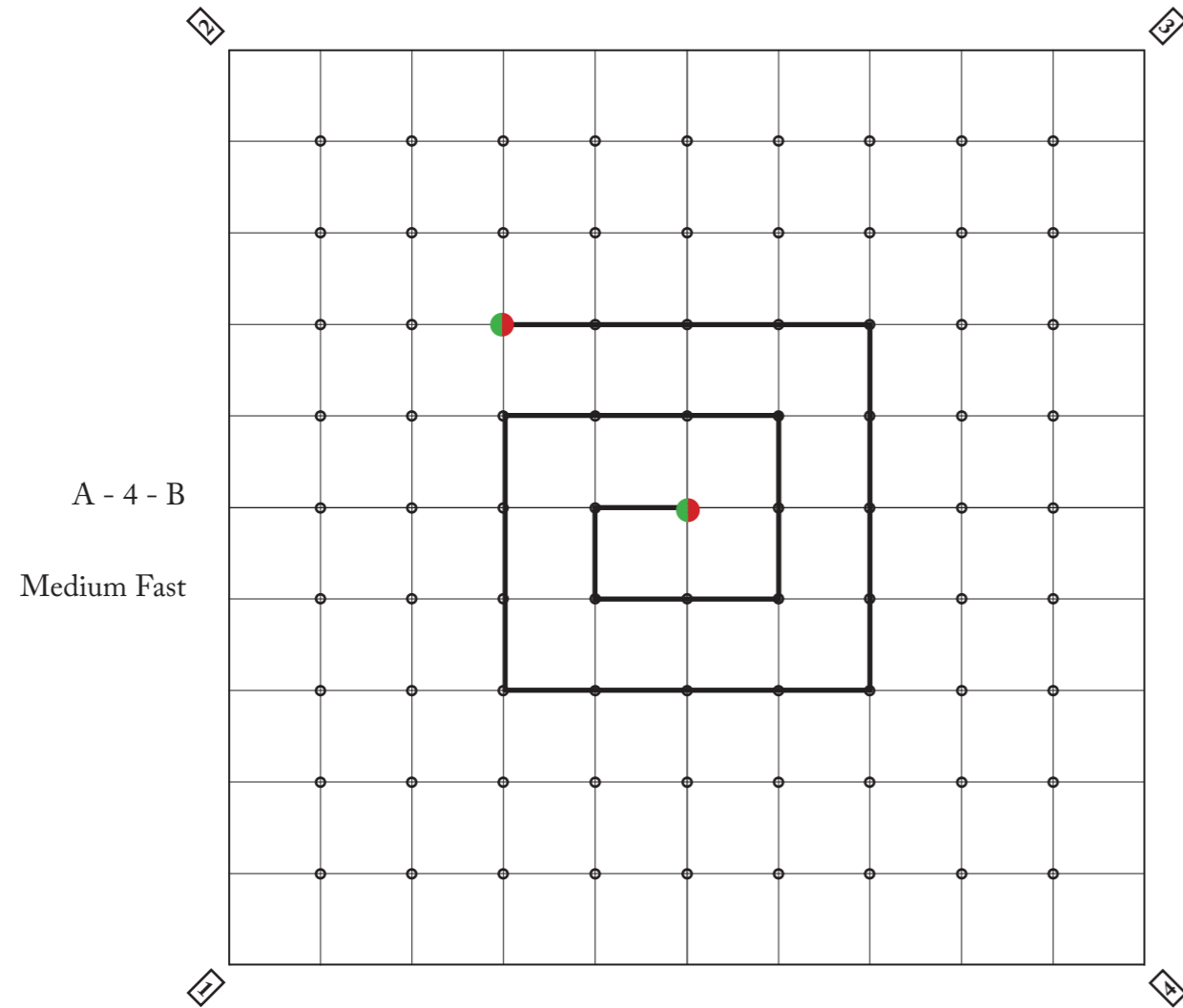
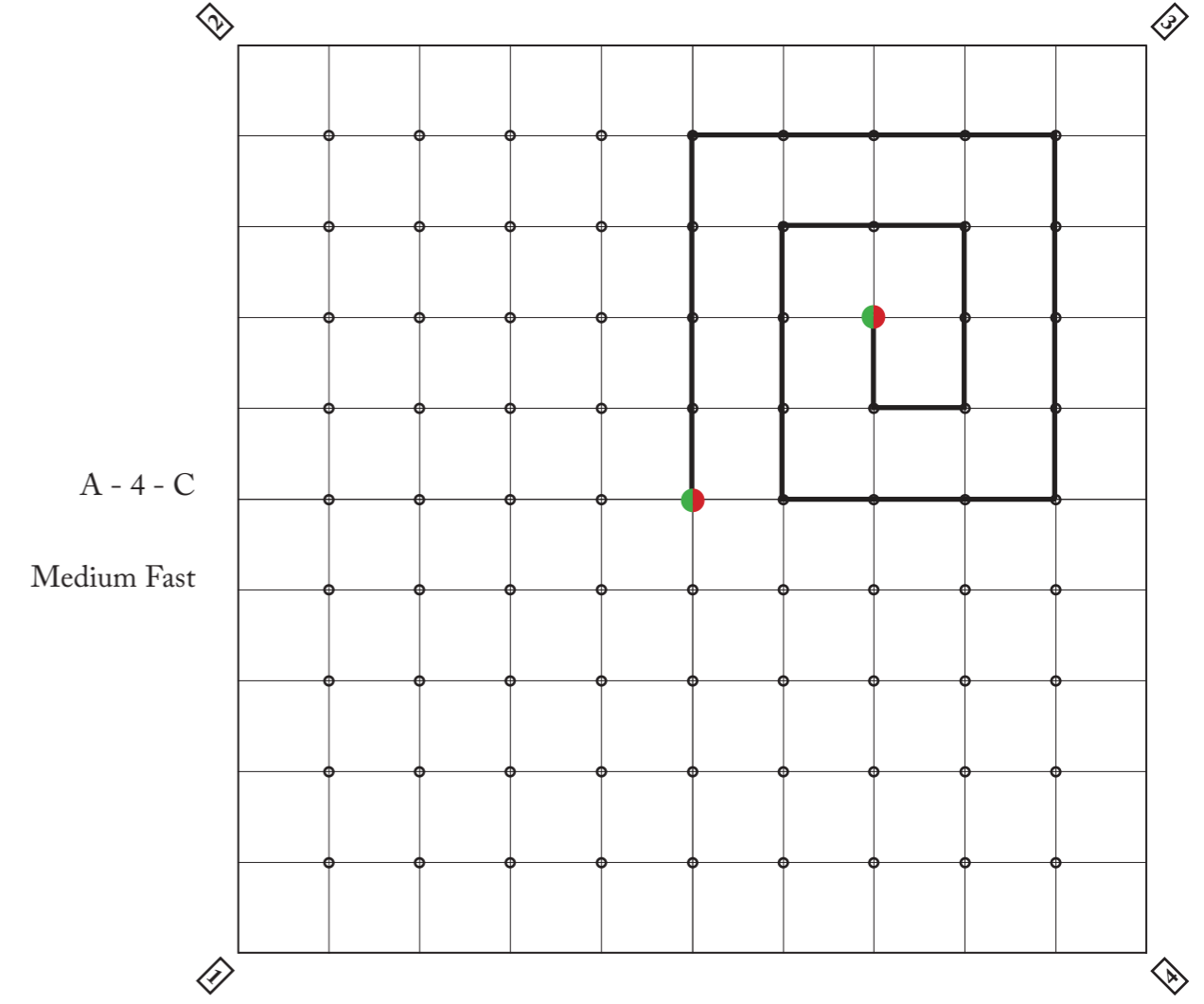
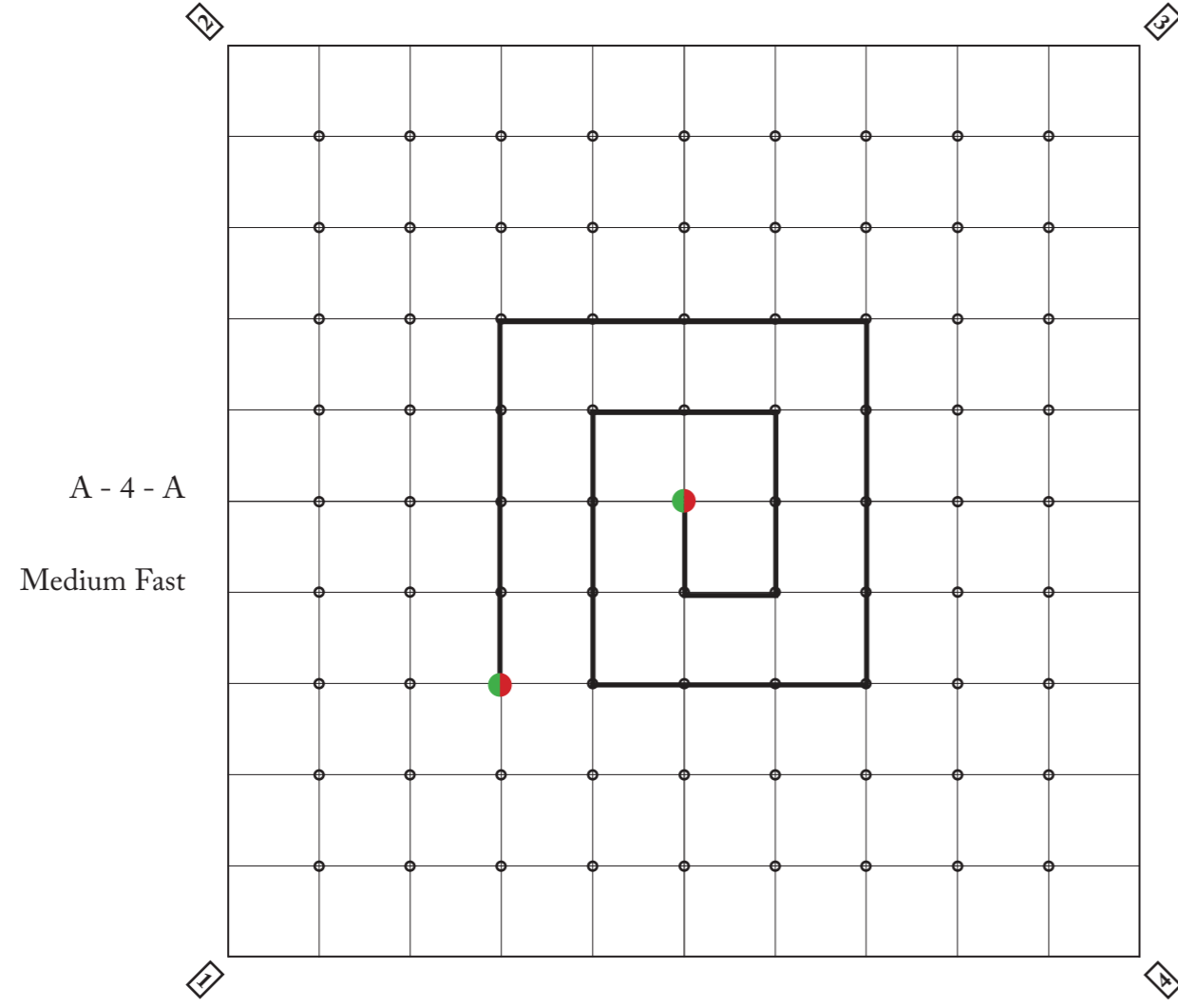


A - 1 - D
Medium Fast





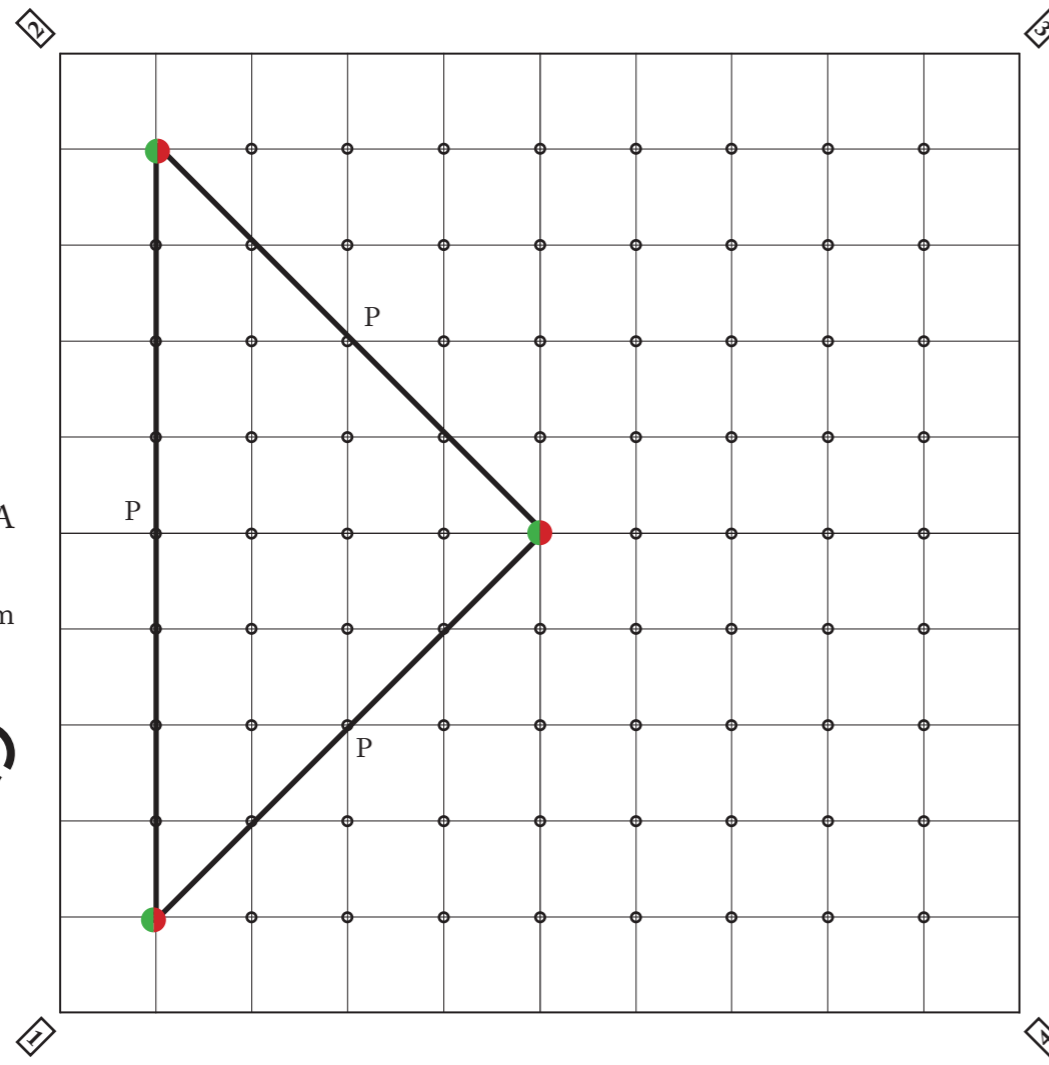




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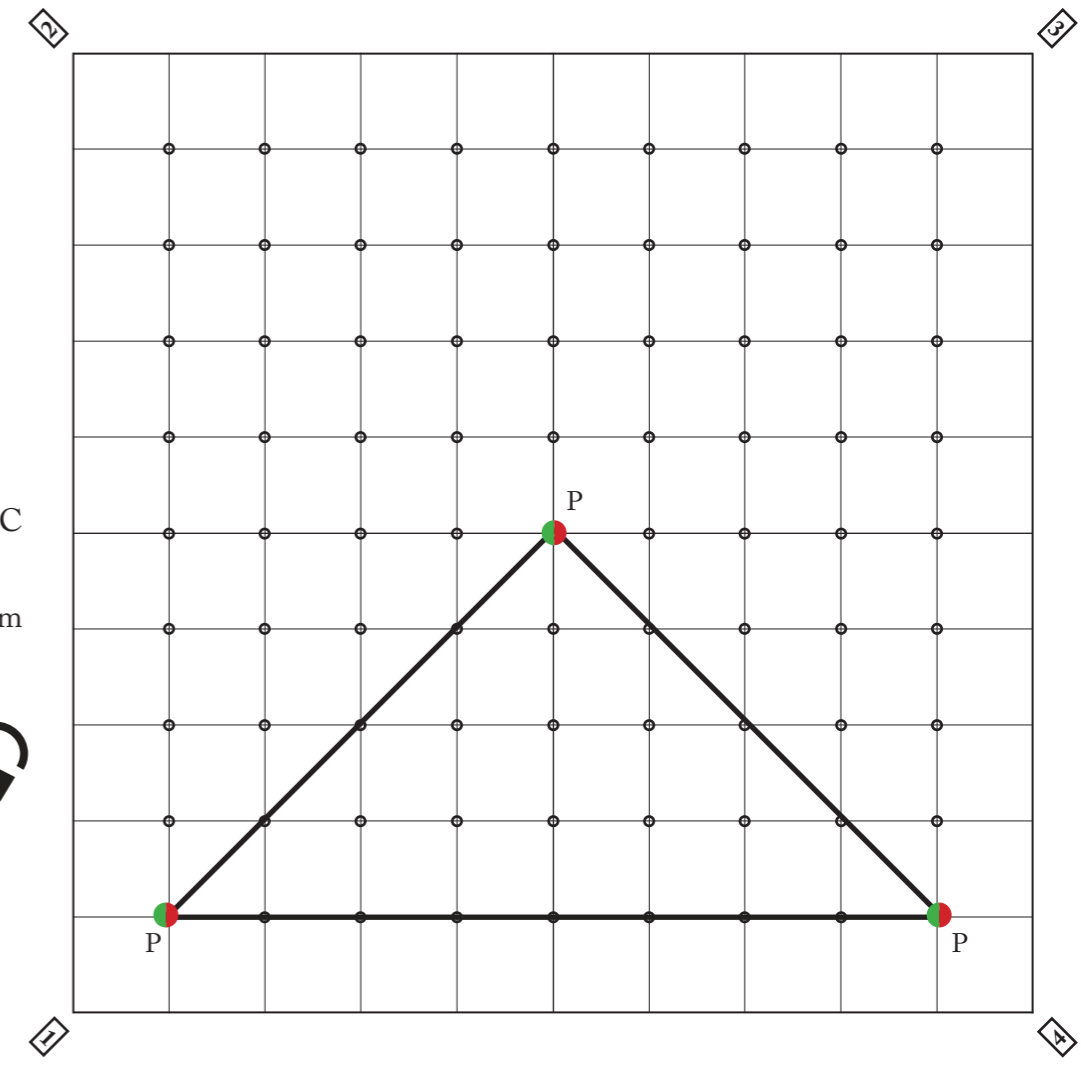
B - 1 - A

Medium



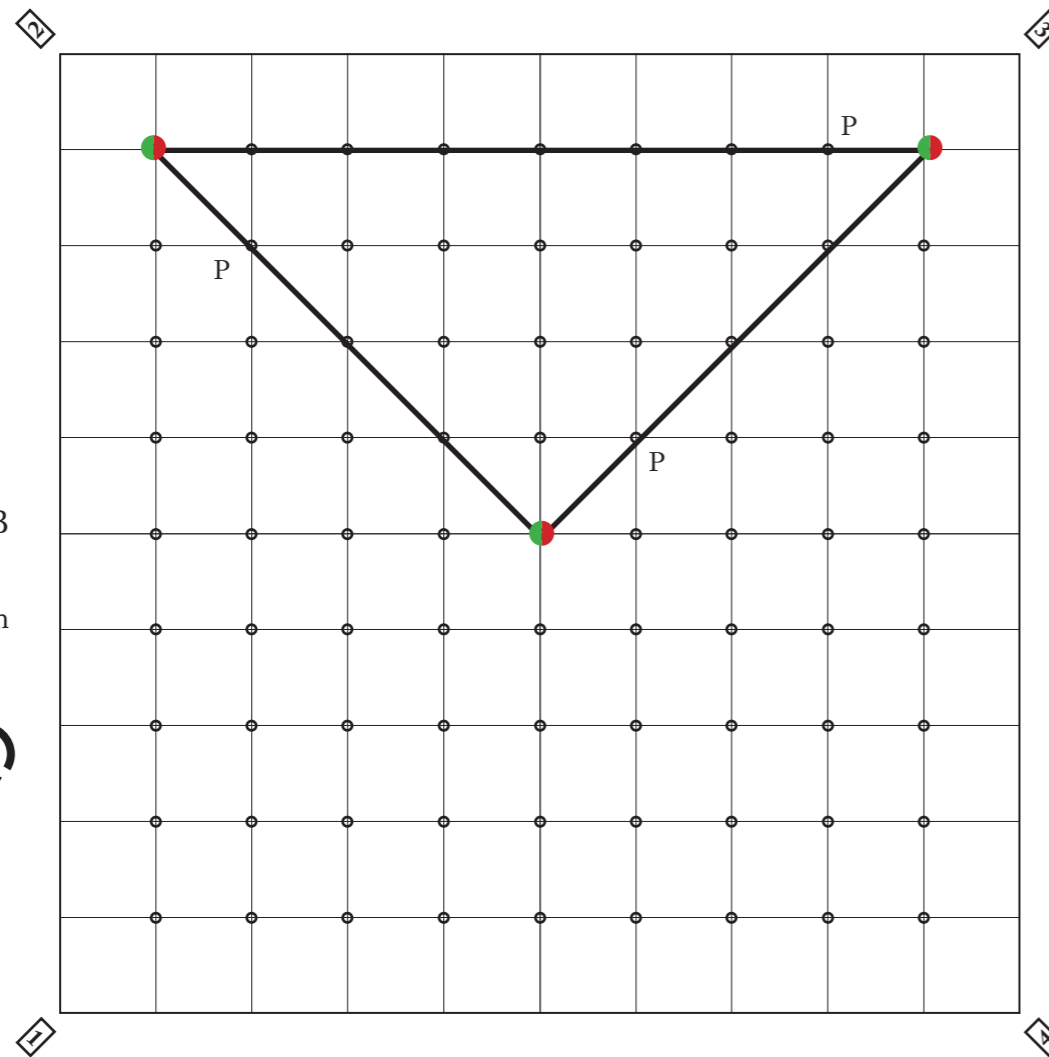
B - 1 - C

Medium



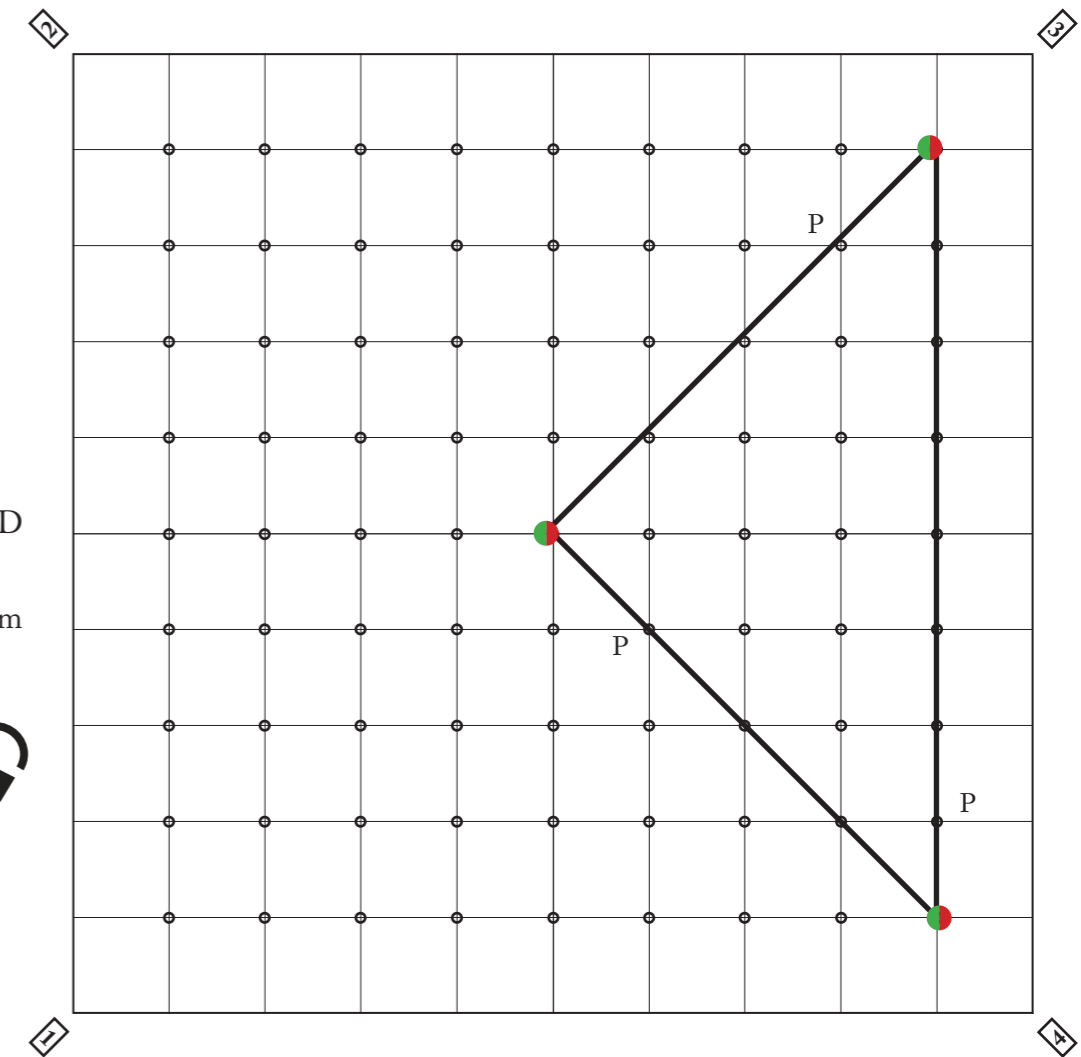
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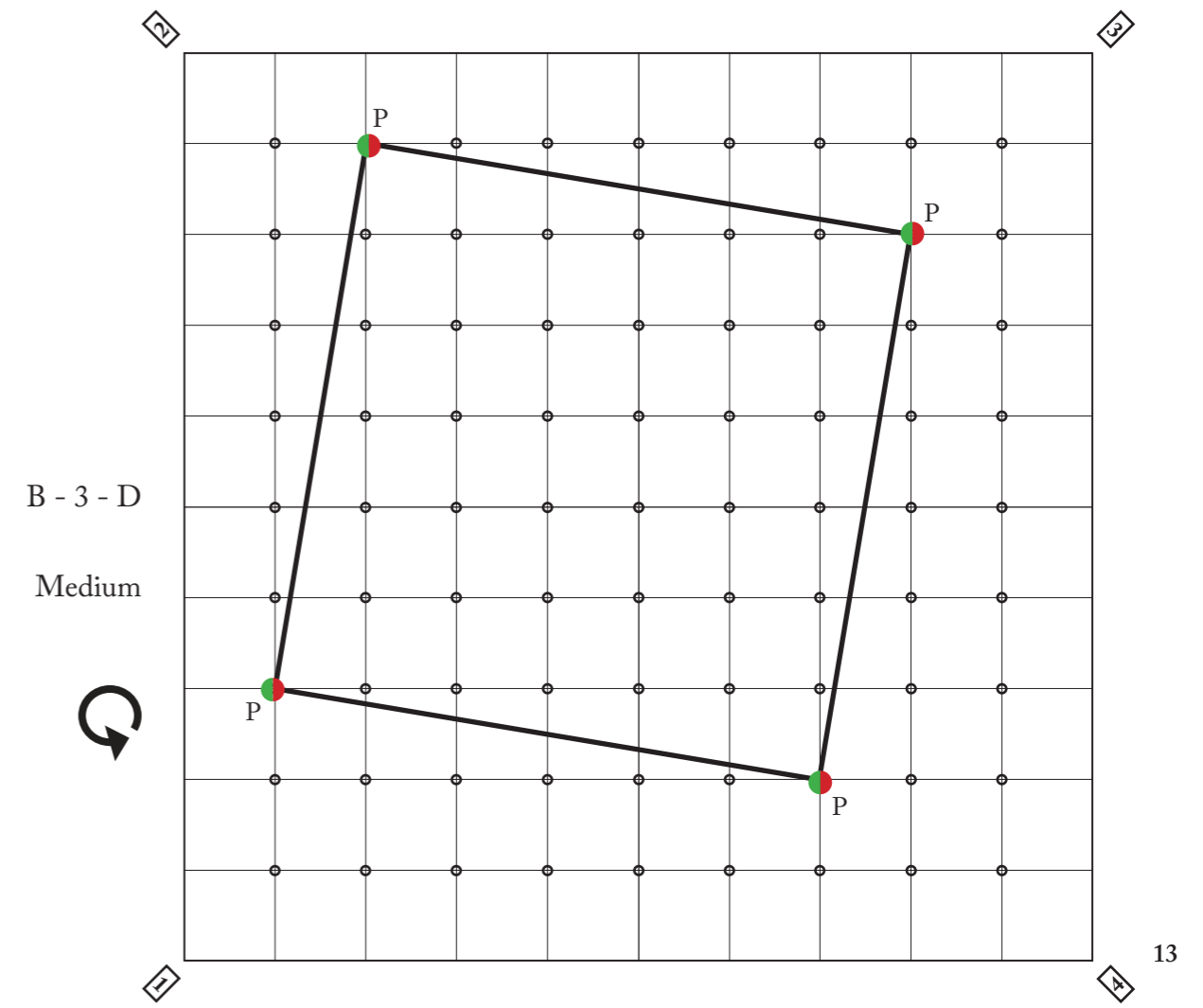
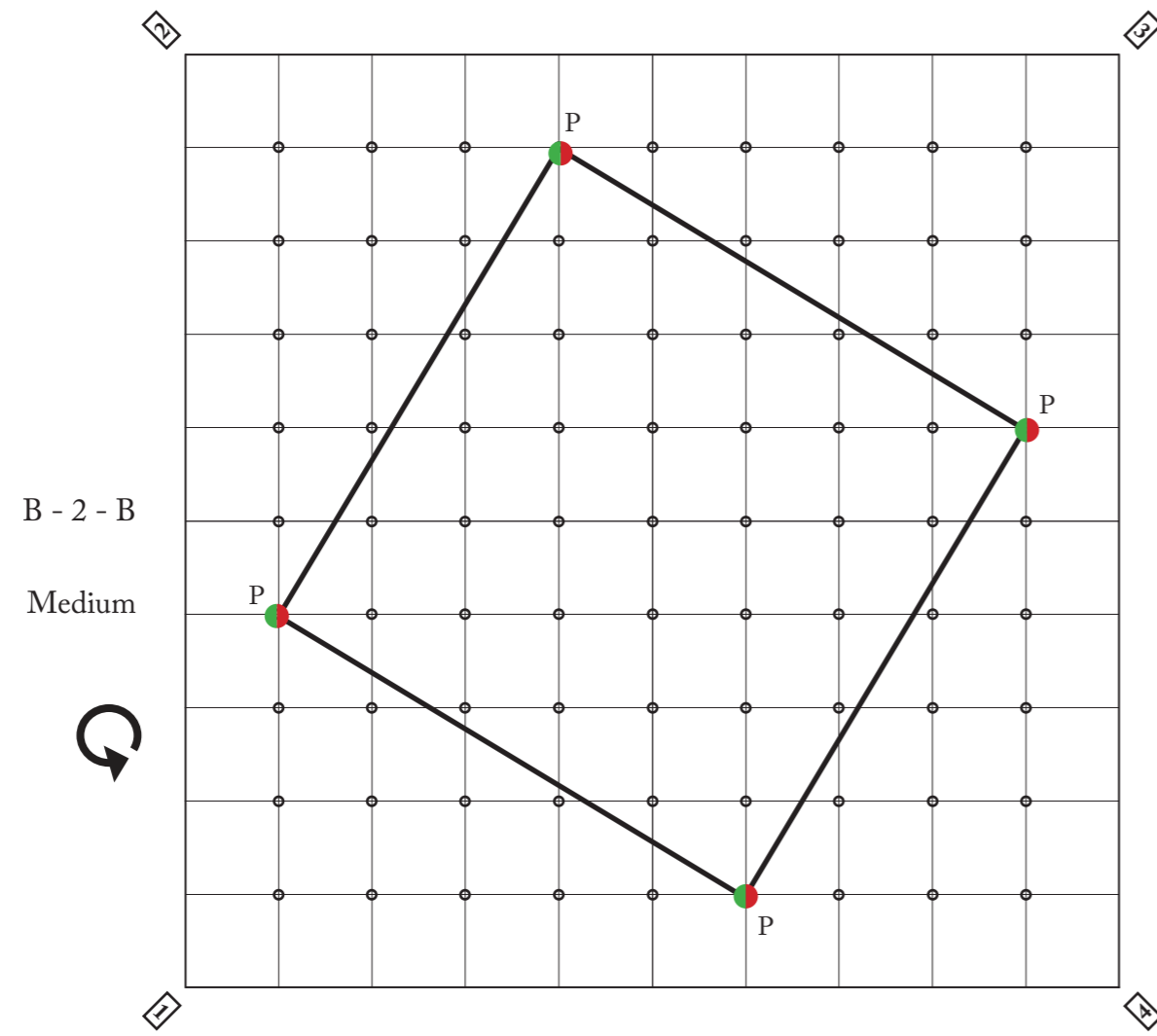
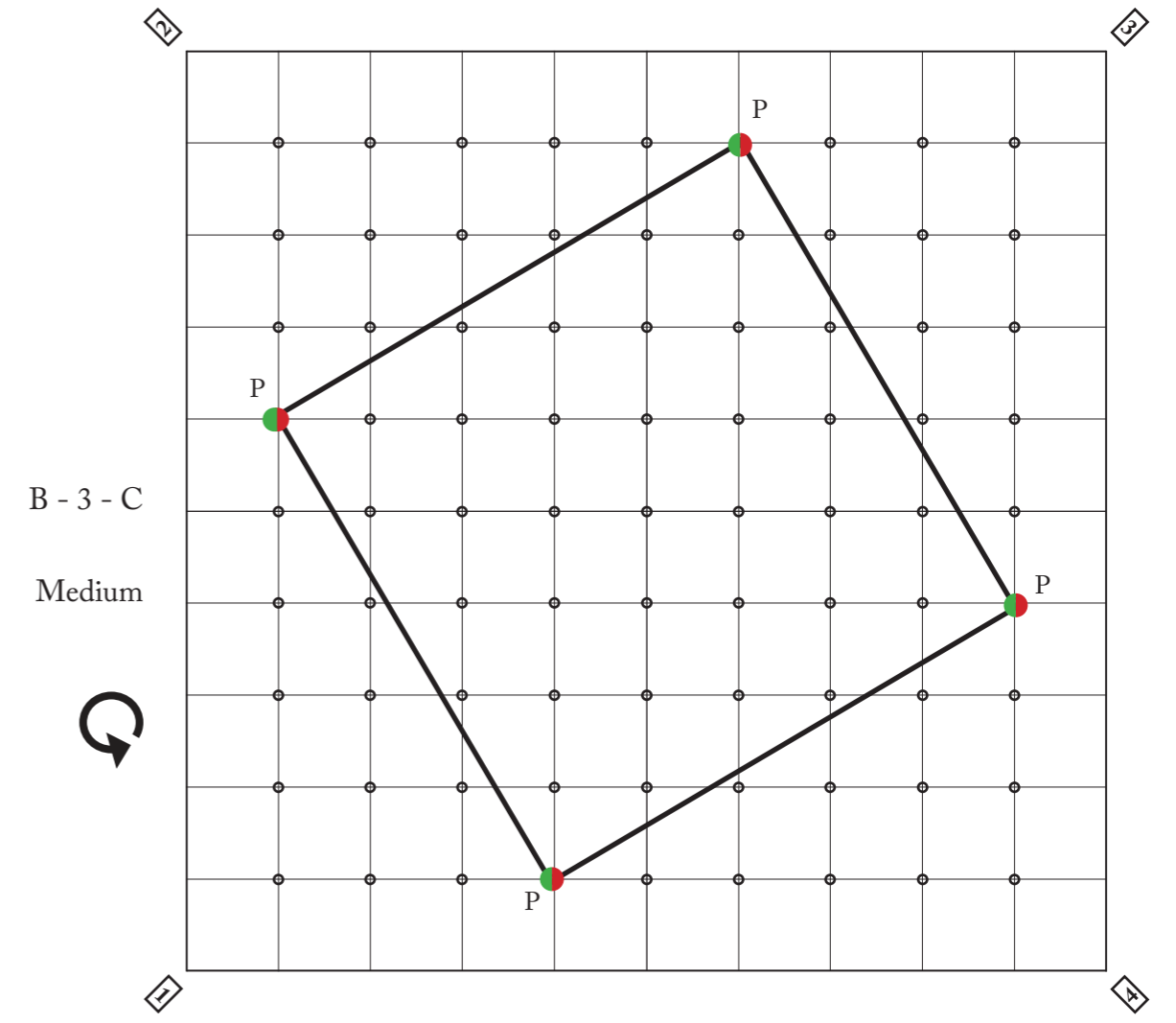
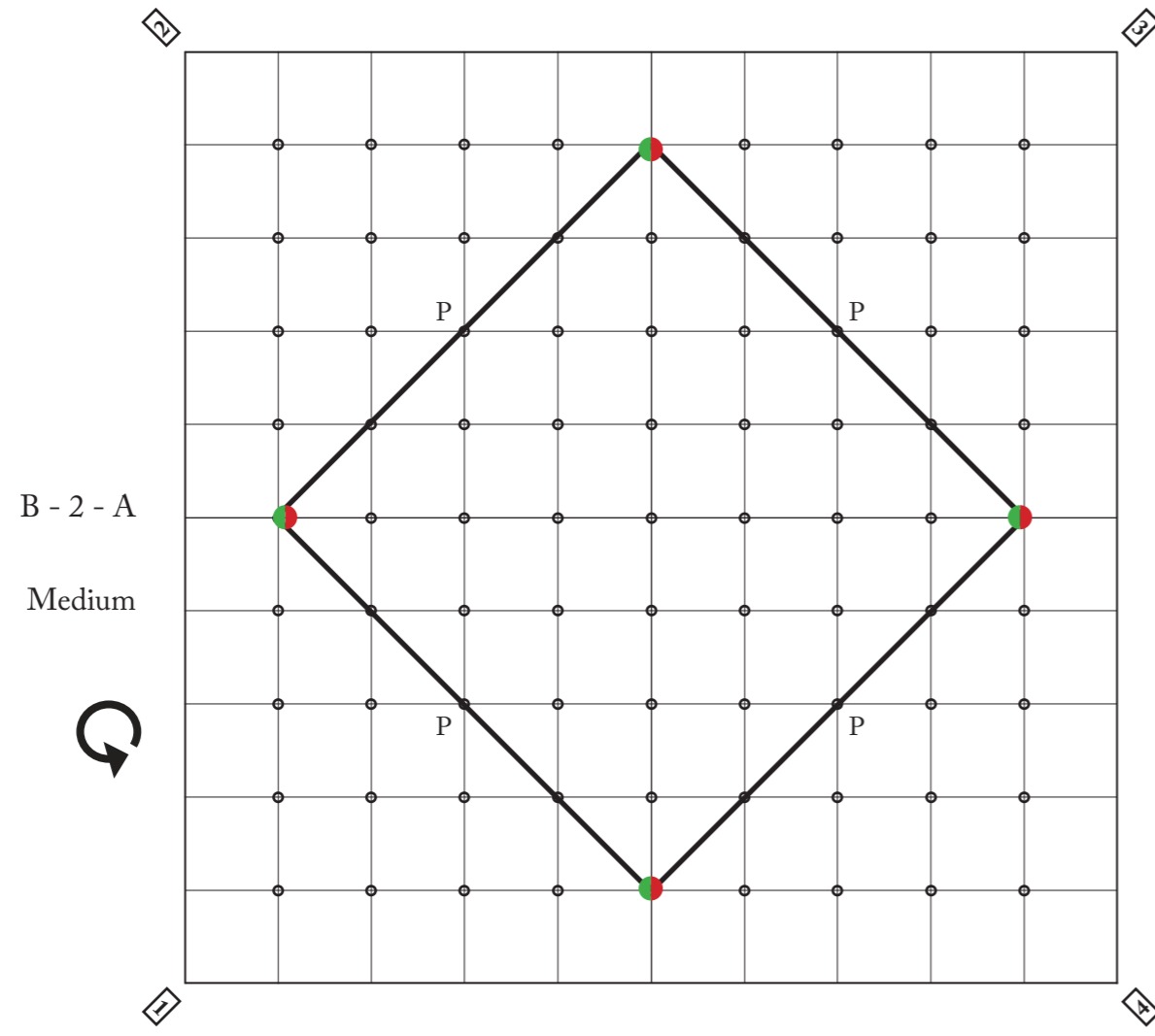
Medium

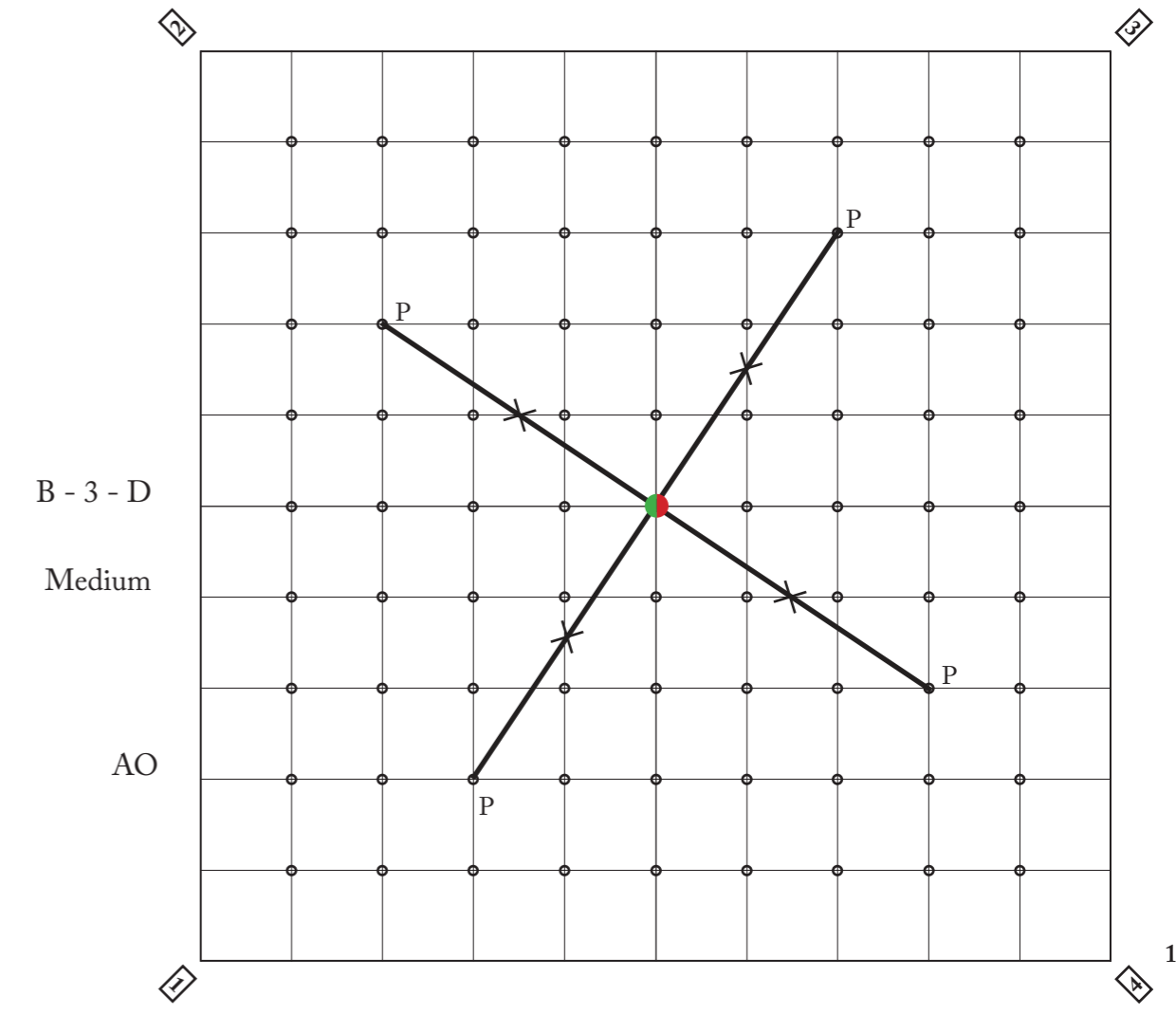
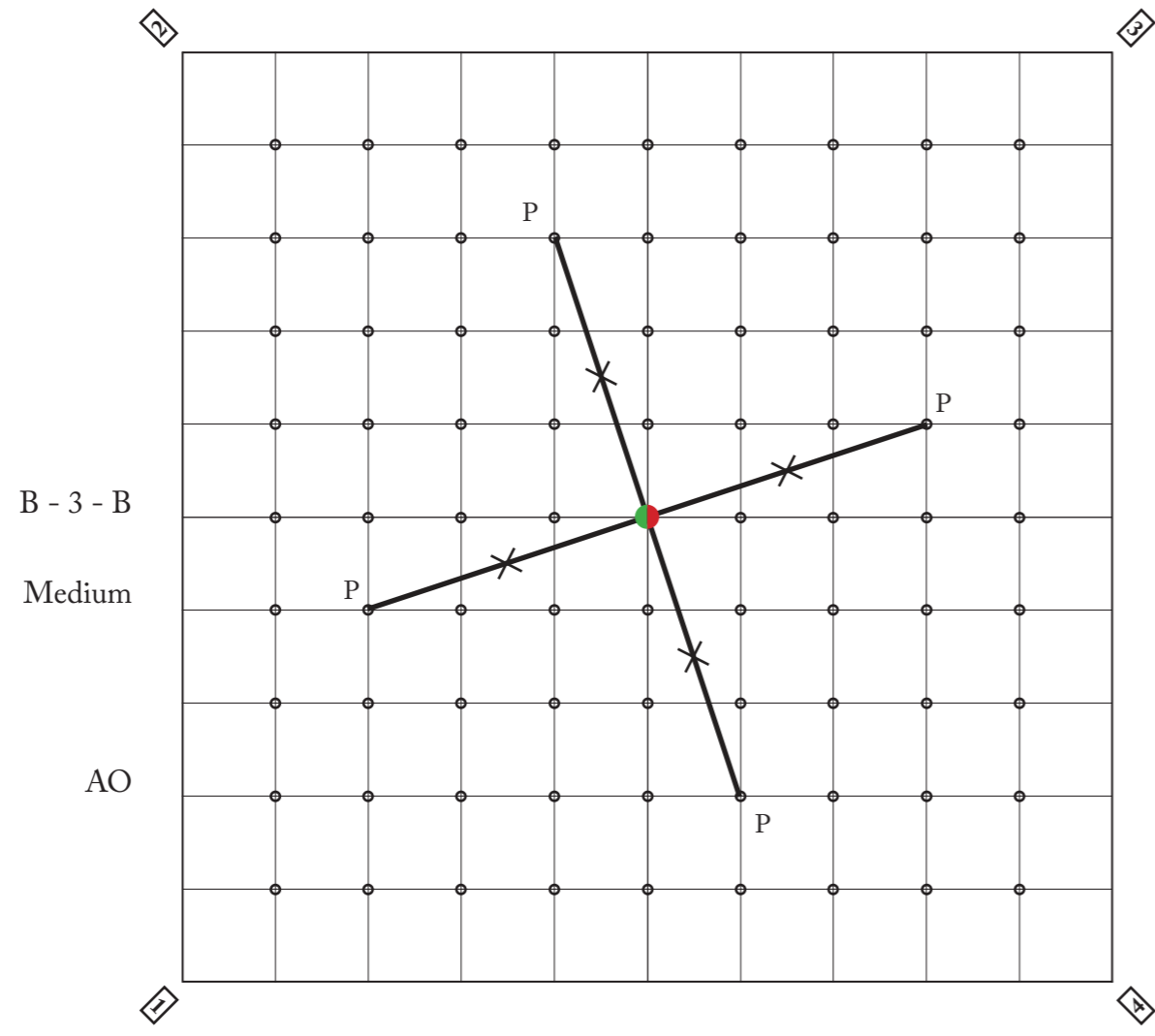
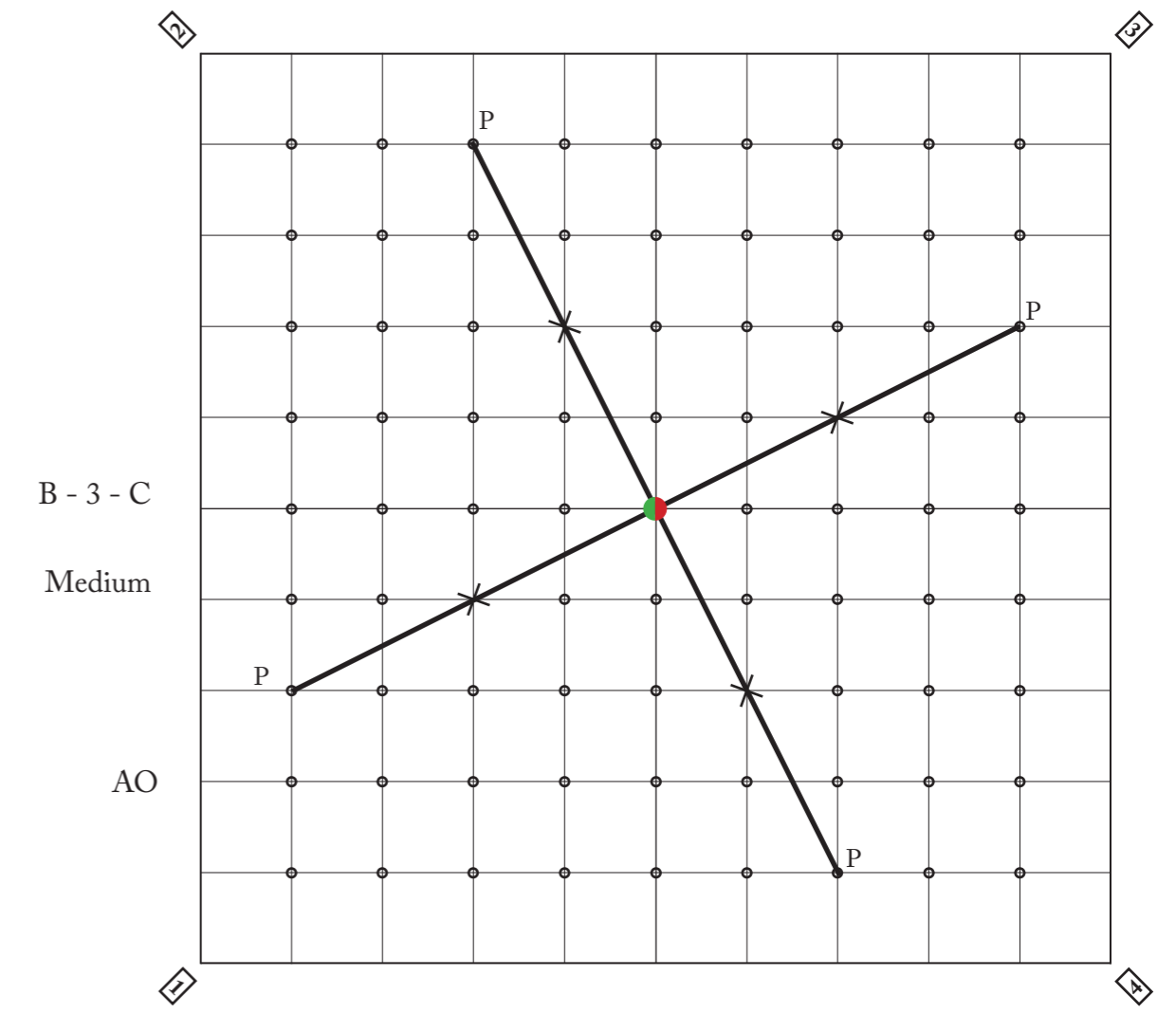
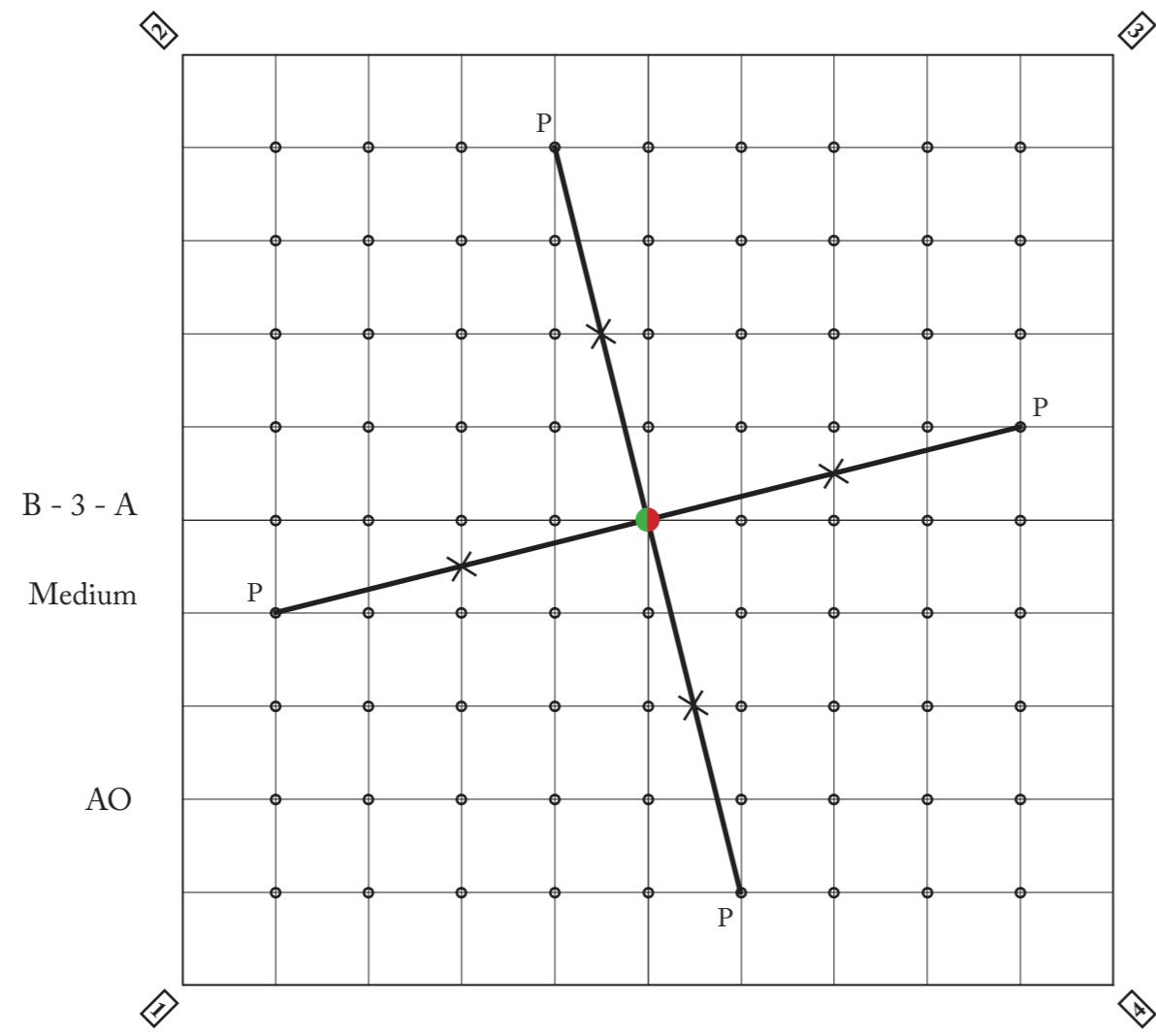


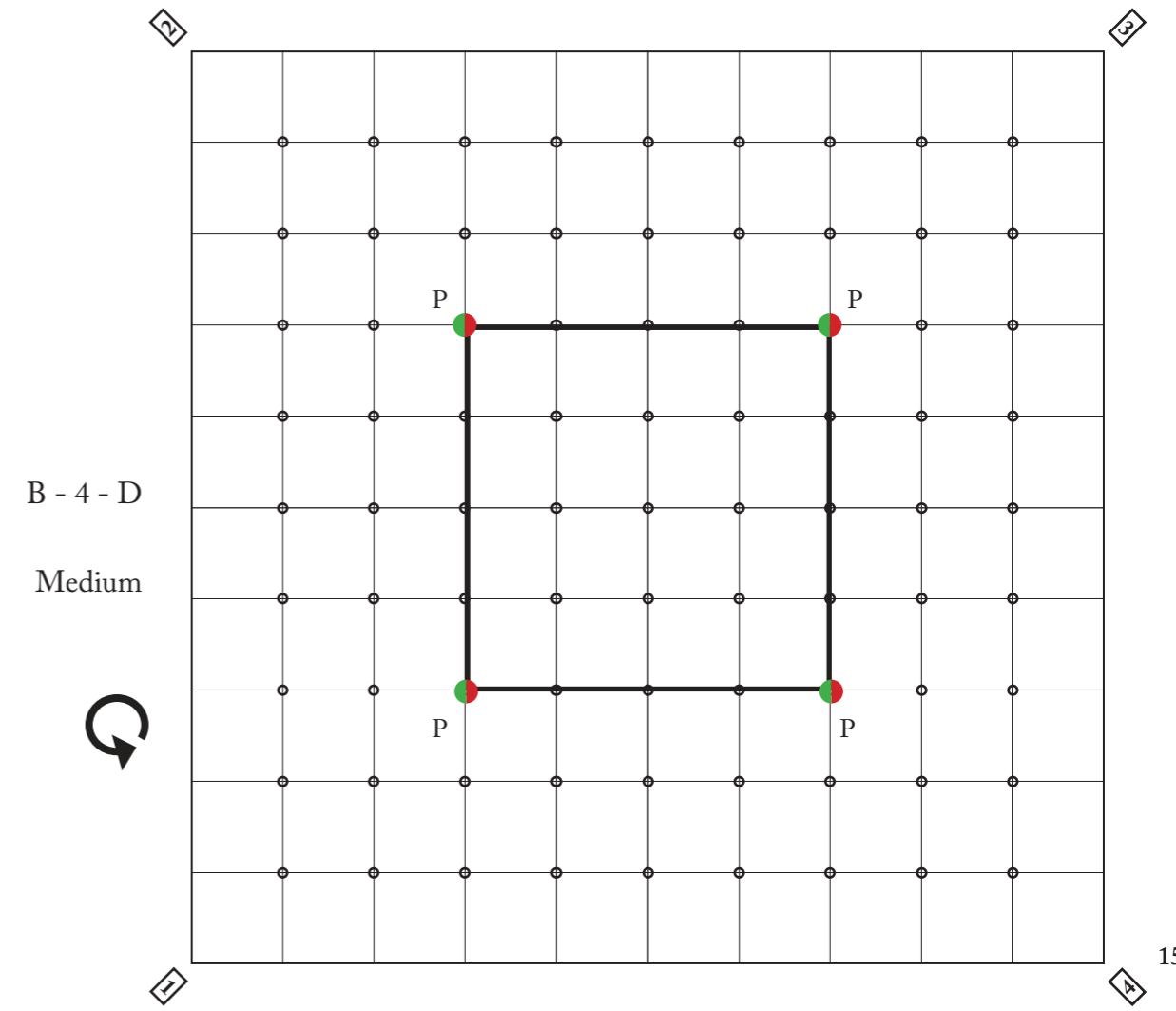
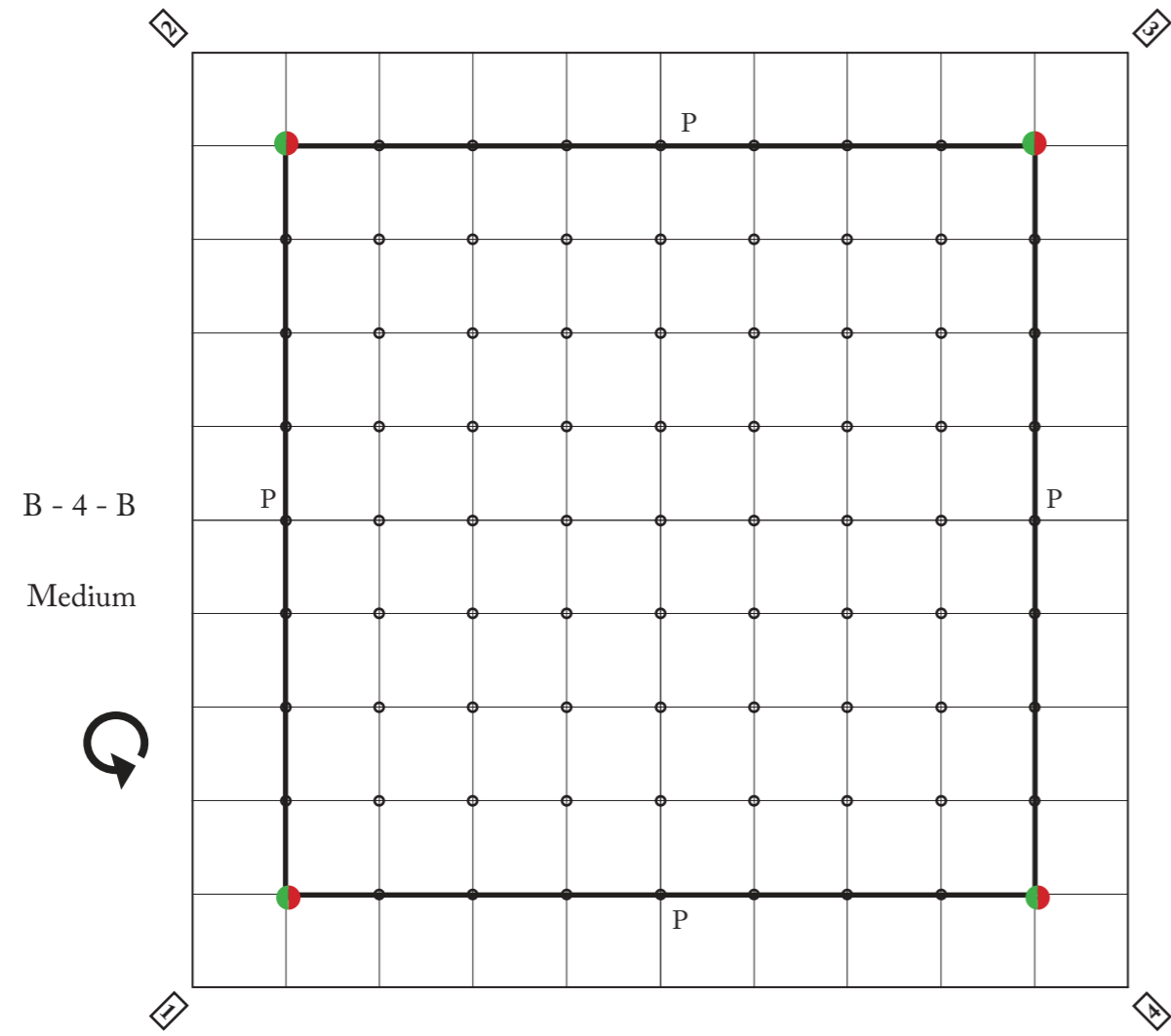
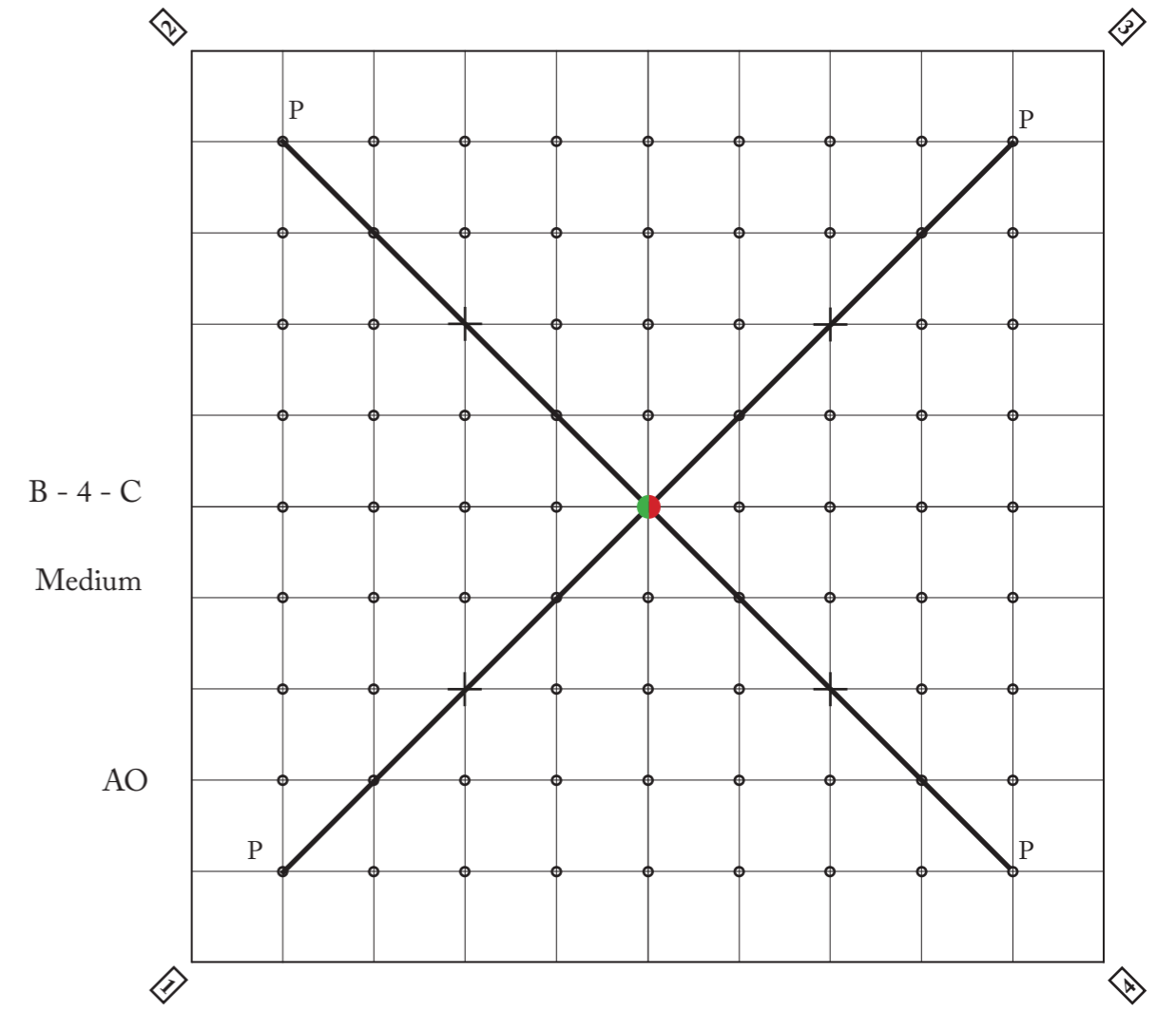
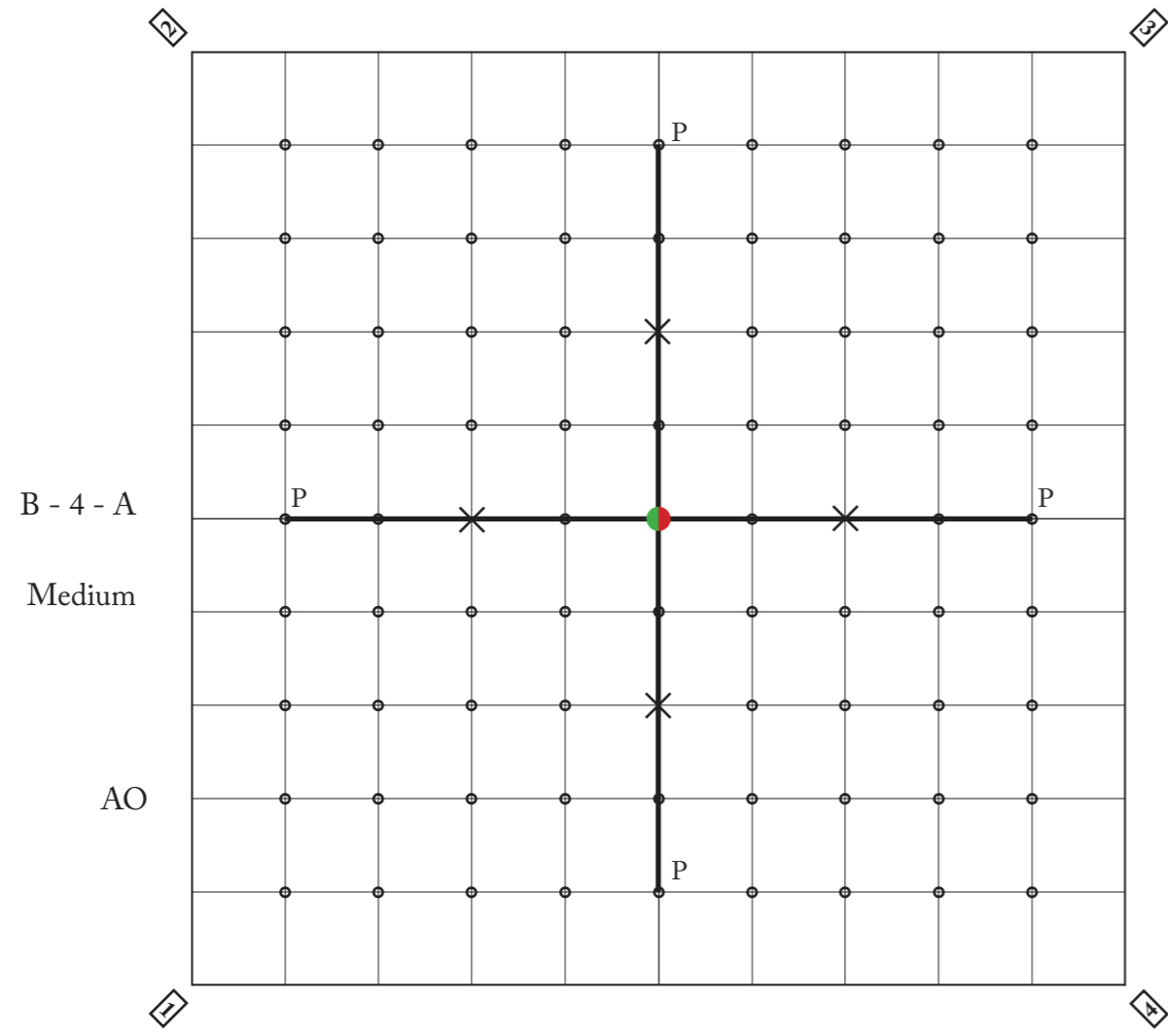
B - 1 - D

Medium

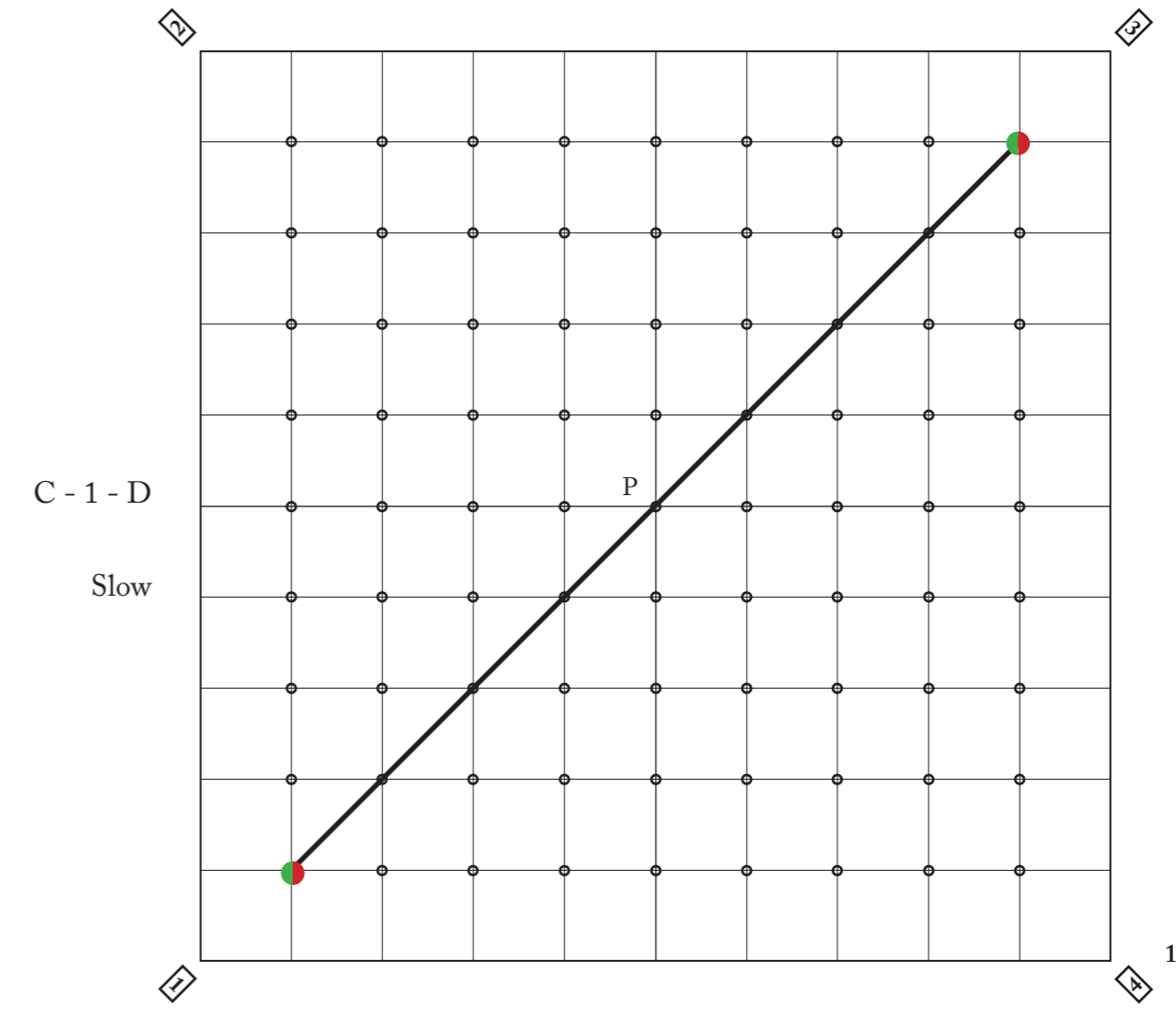
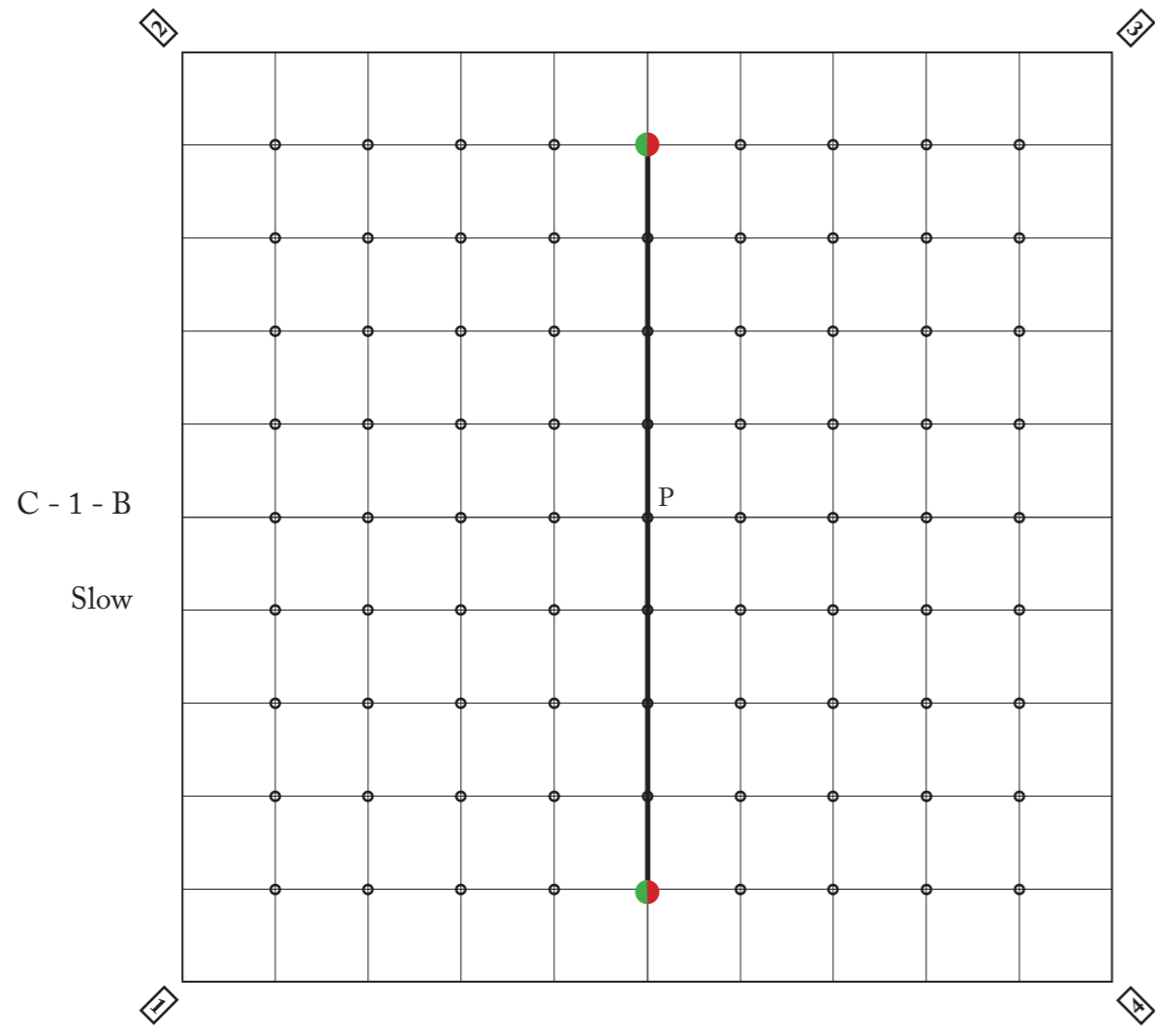
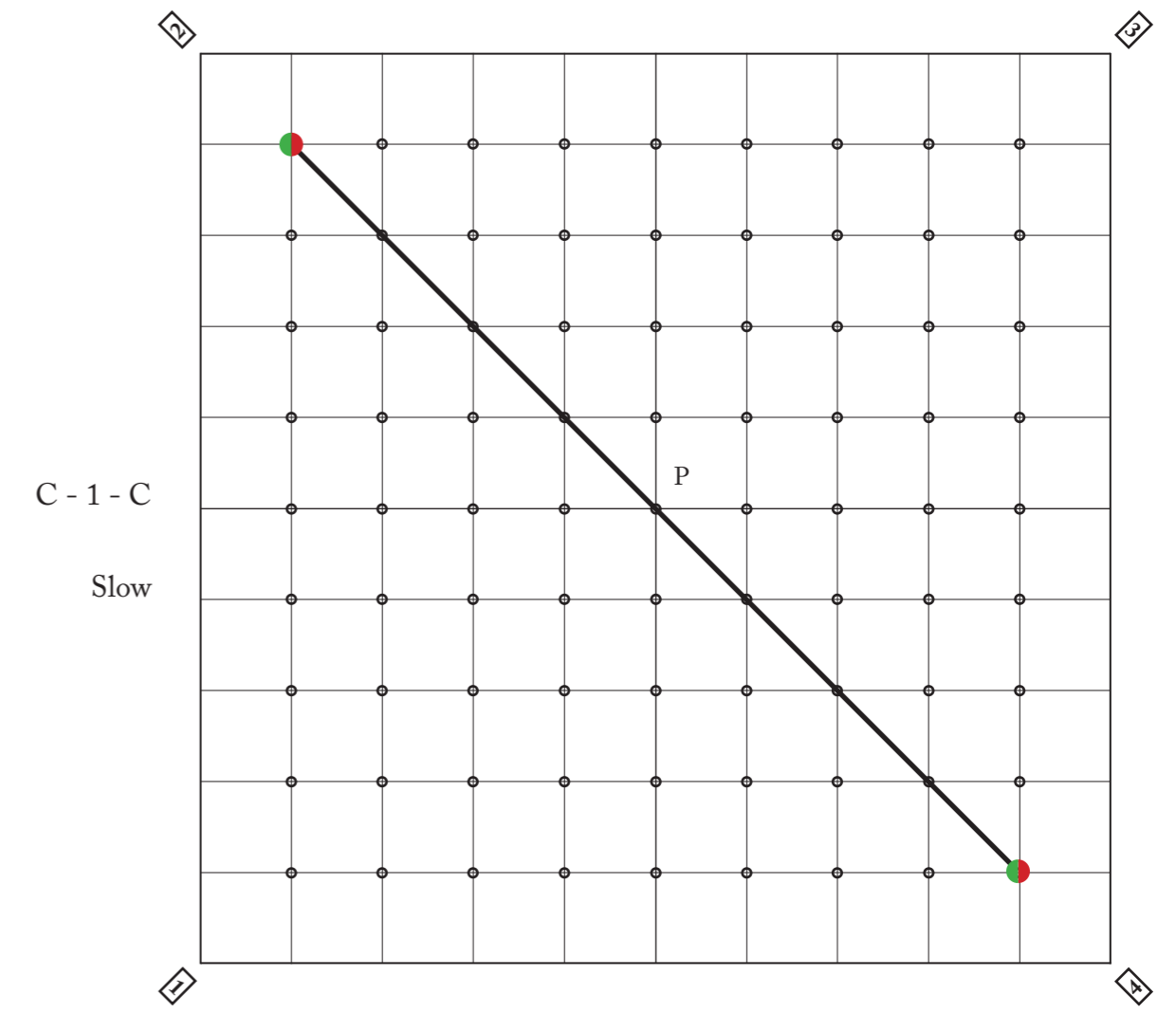
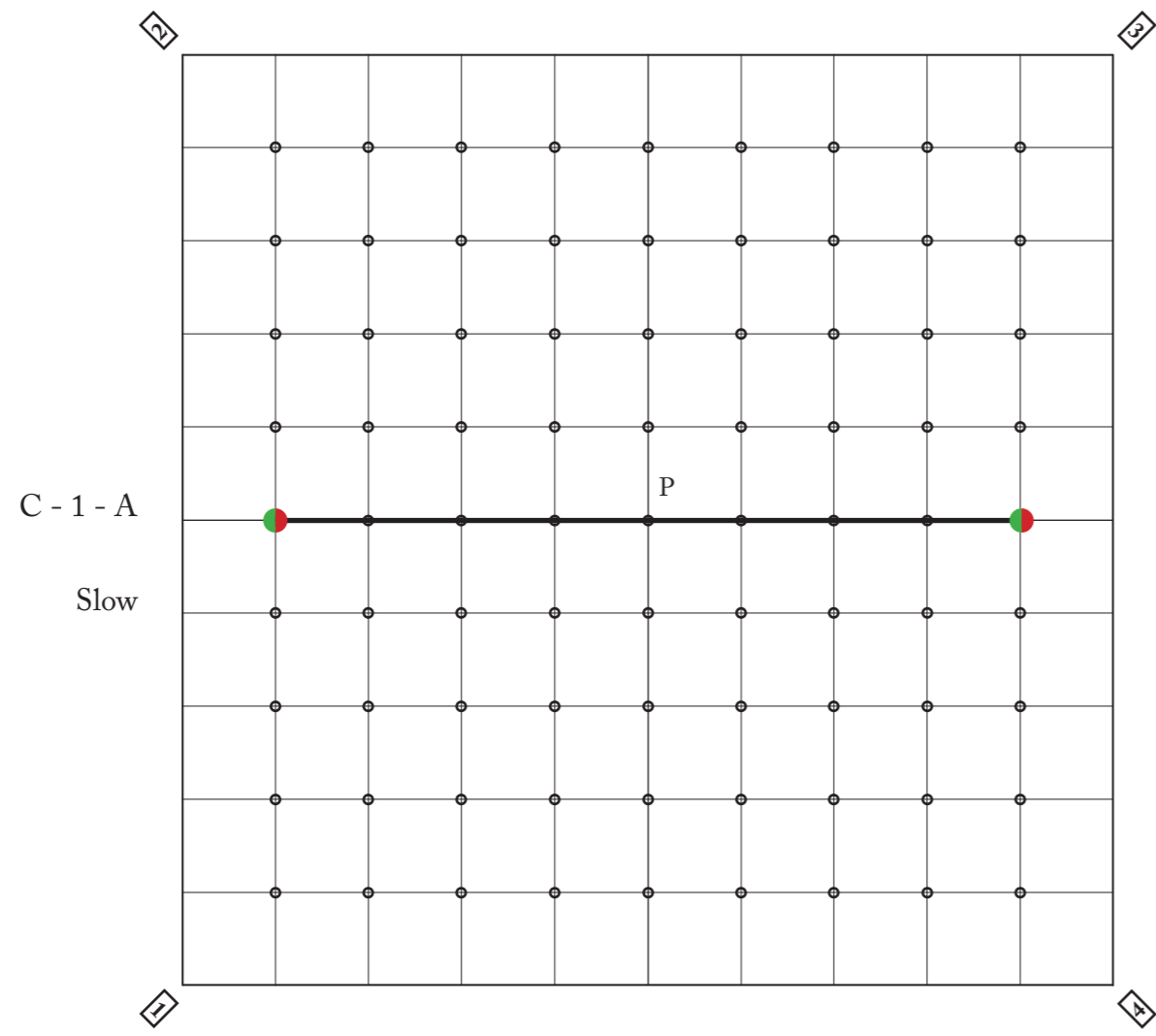




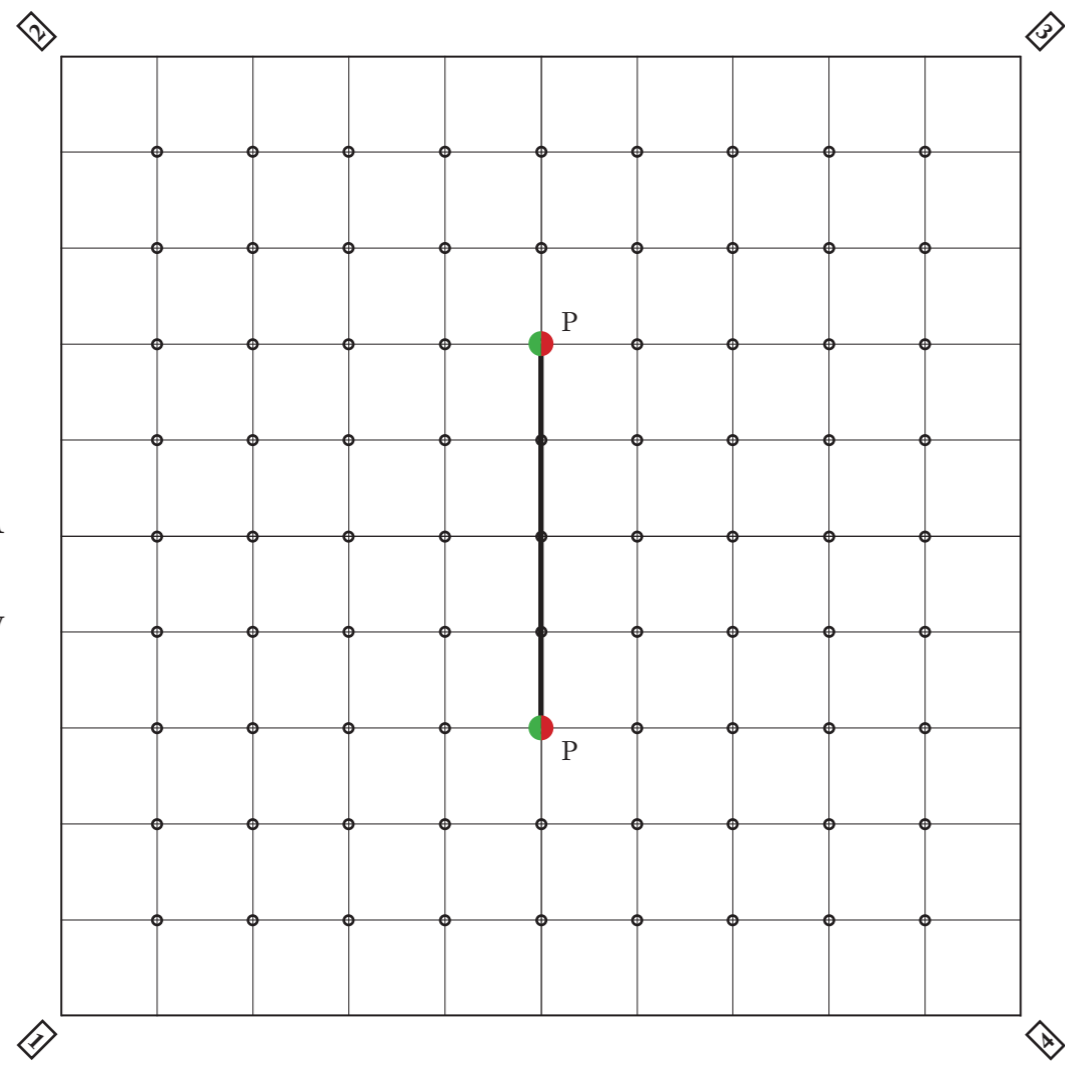




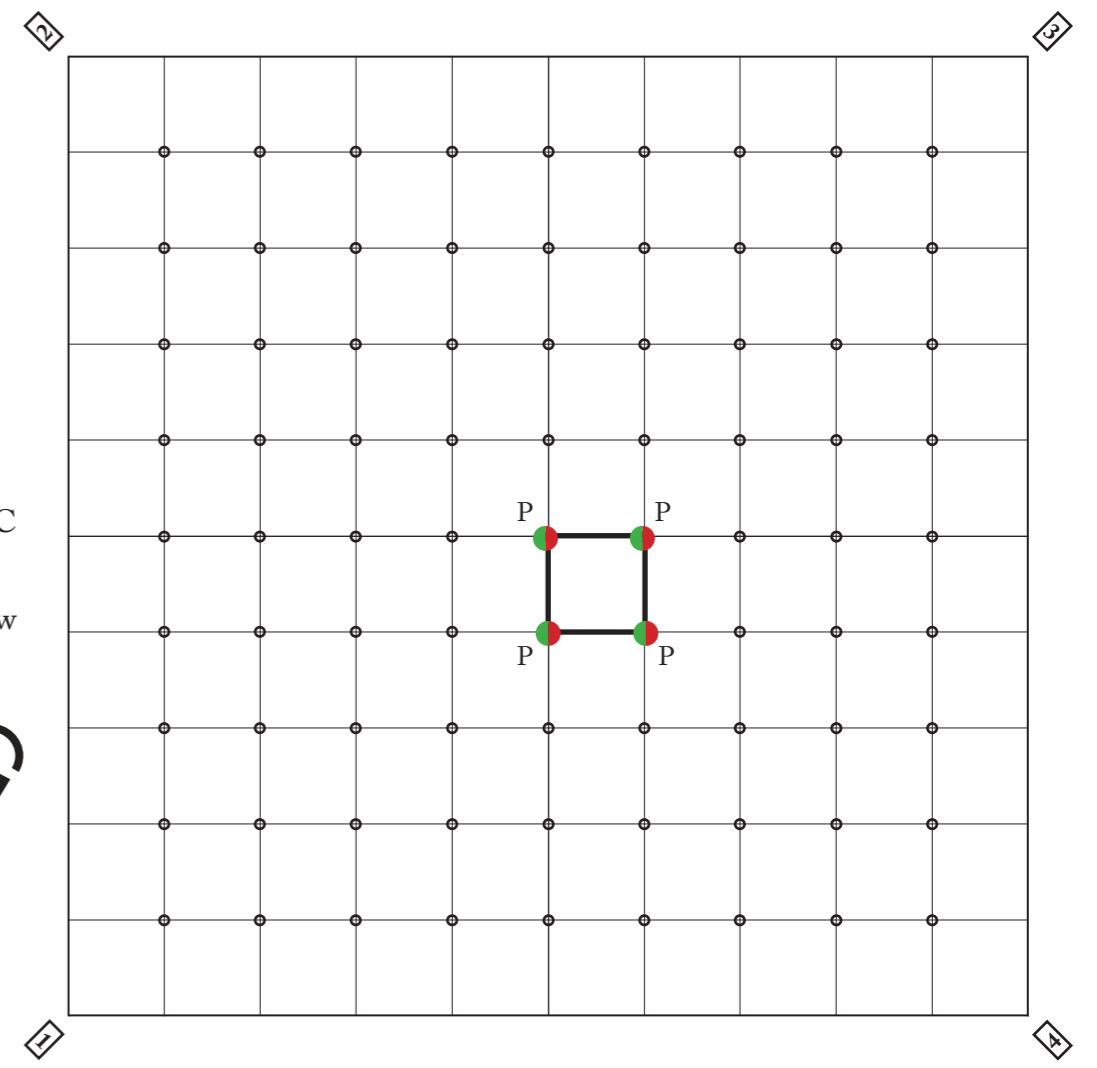
Section C



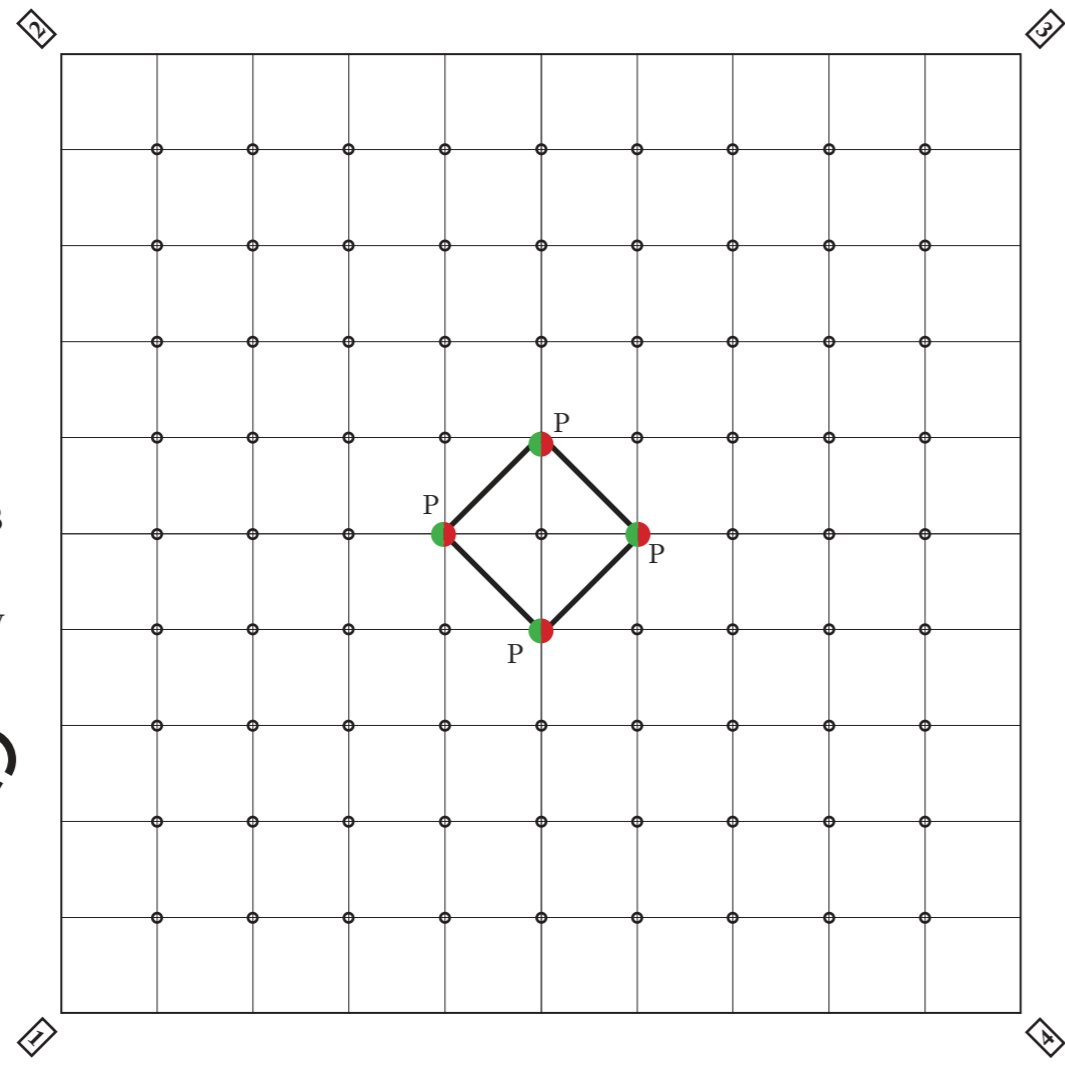
C - 2 - A
Very Slow



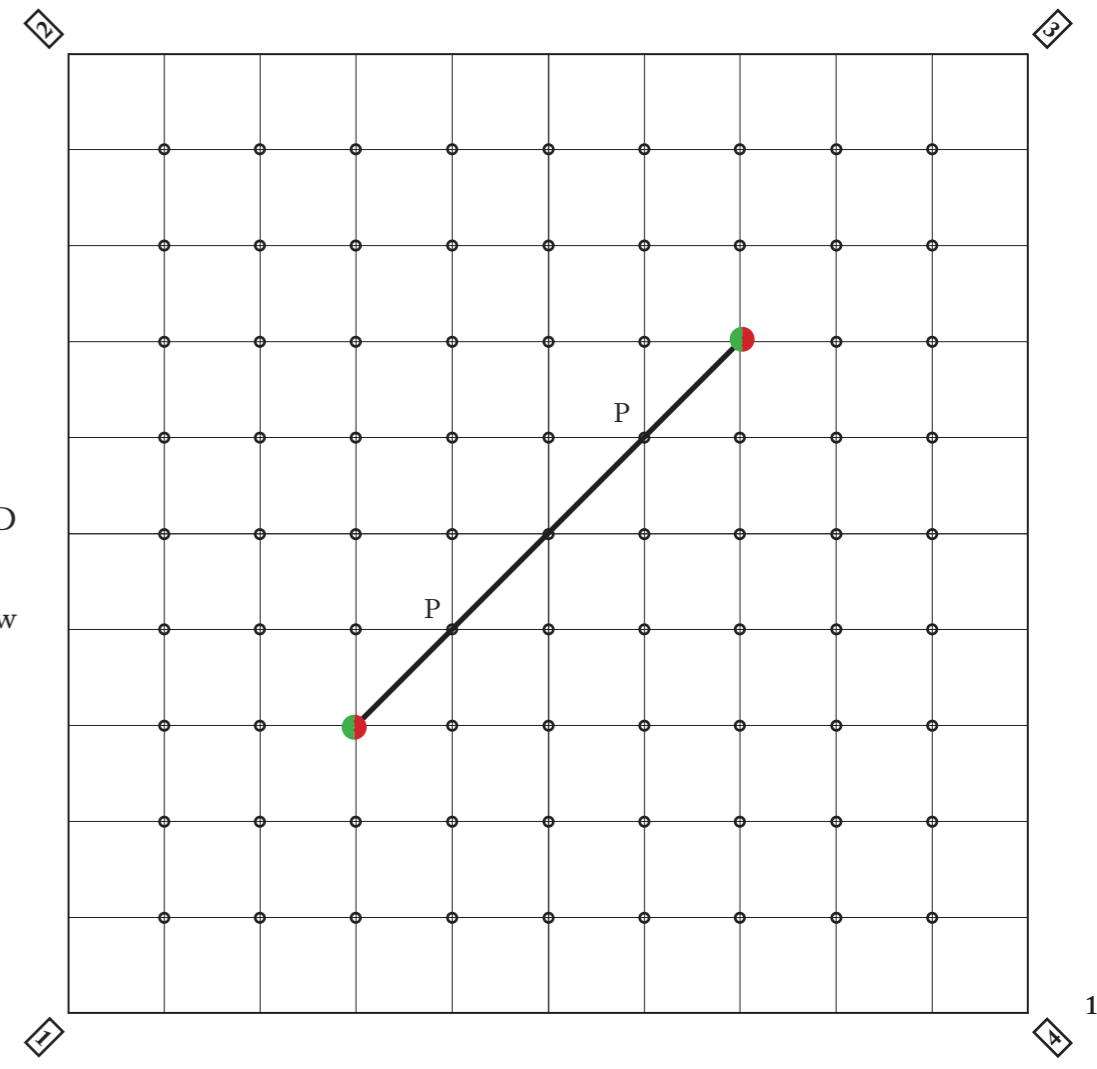
C - 2 - C
Very Slow



C - 2 - B
Very Slow

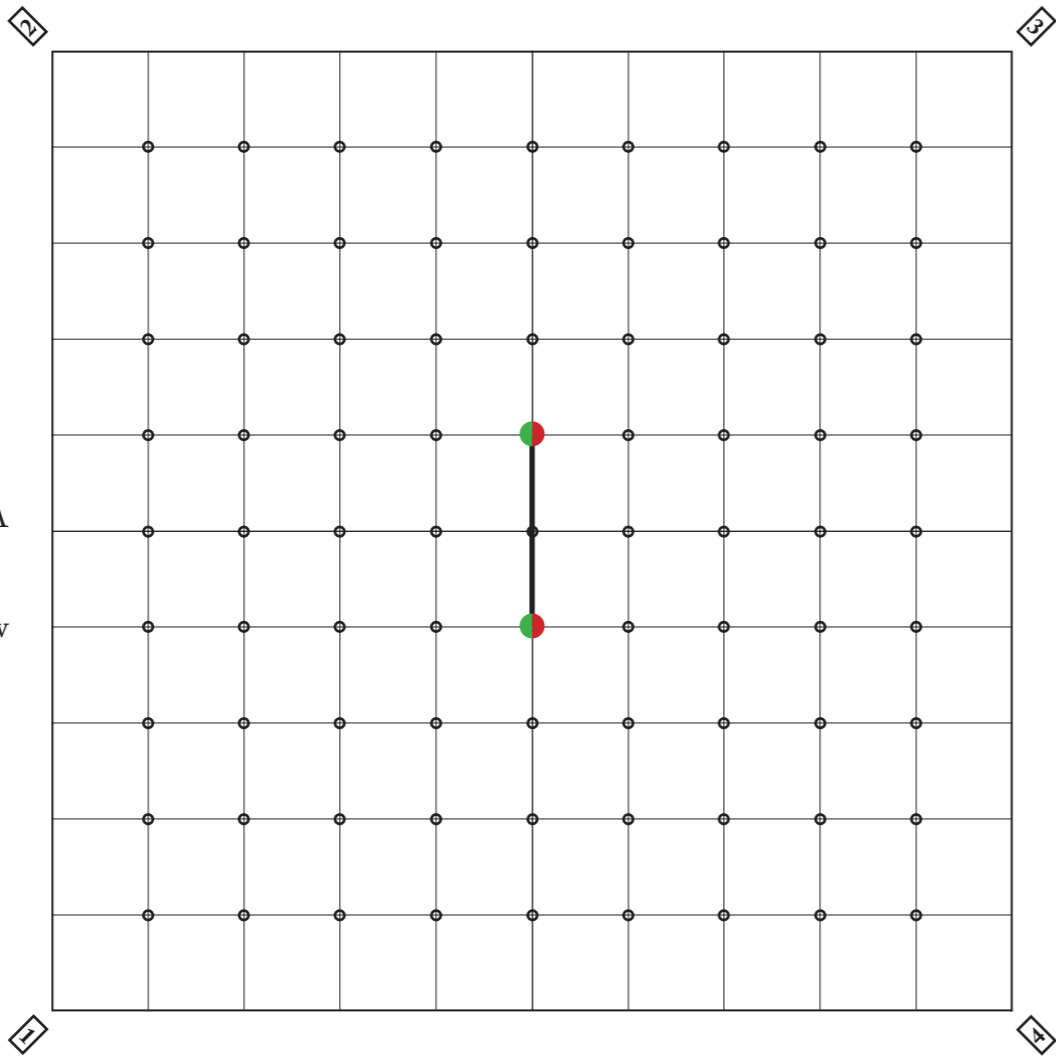


C - 2 - D
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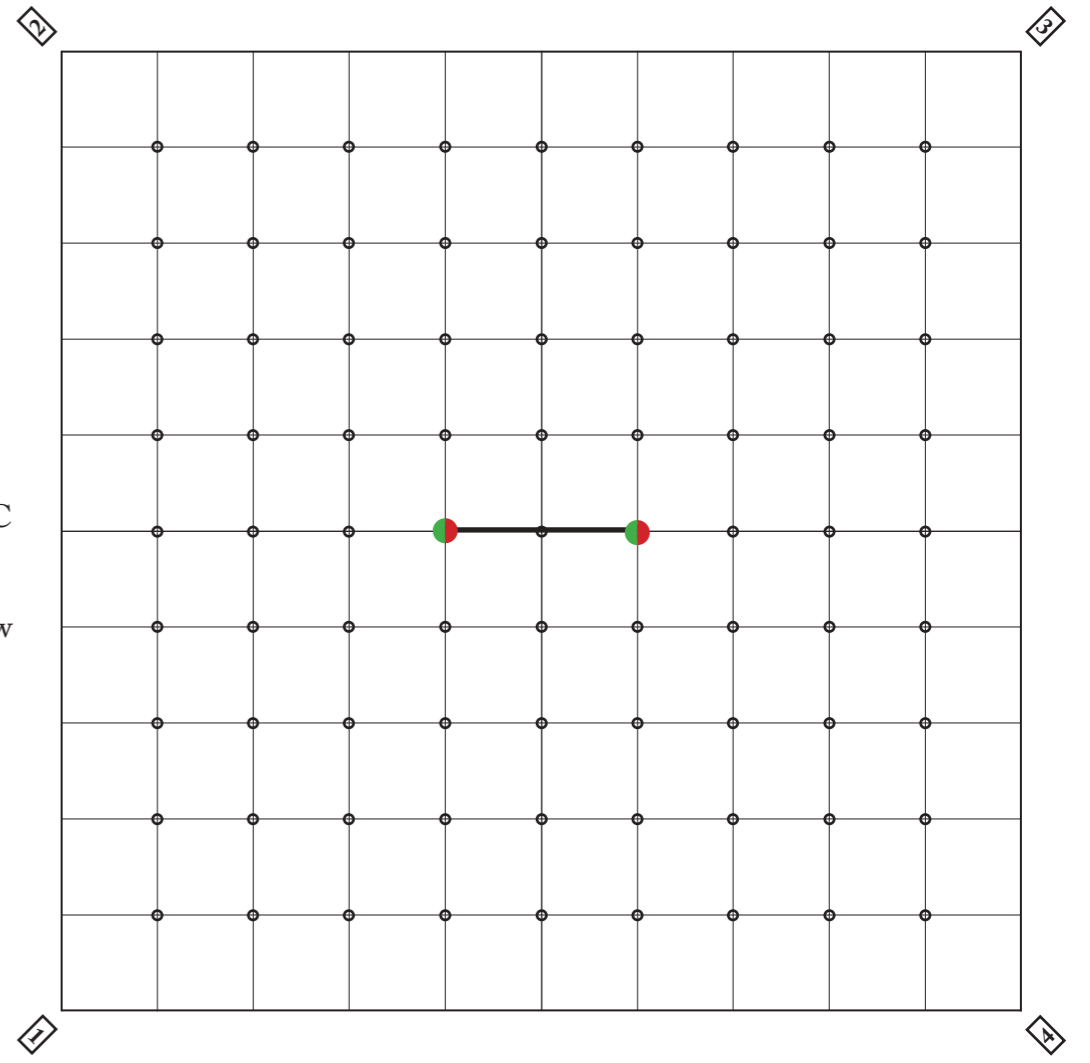
C - 1 - A

Very Slow



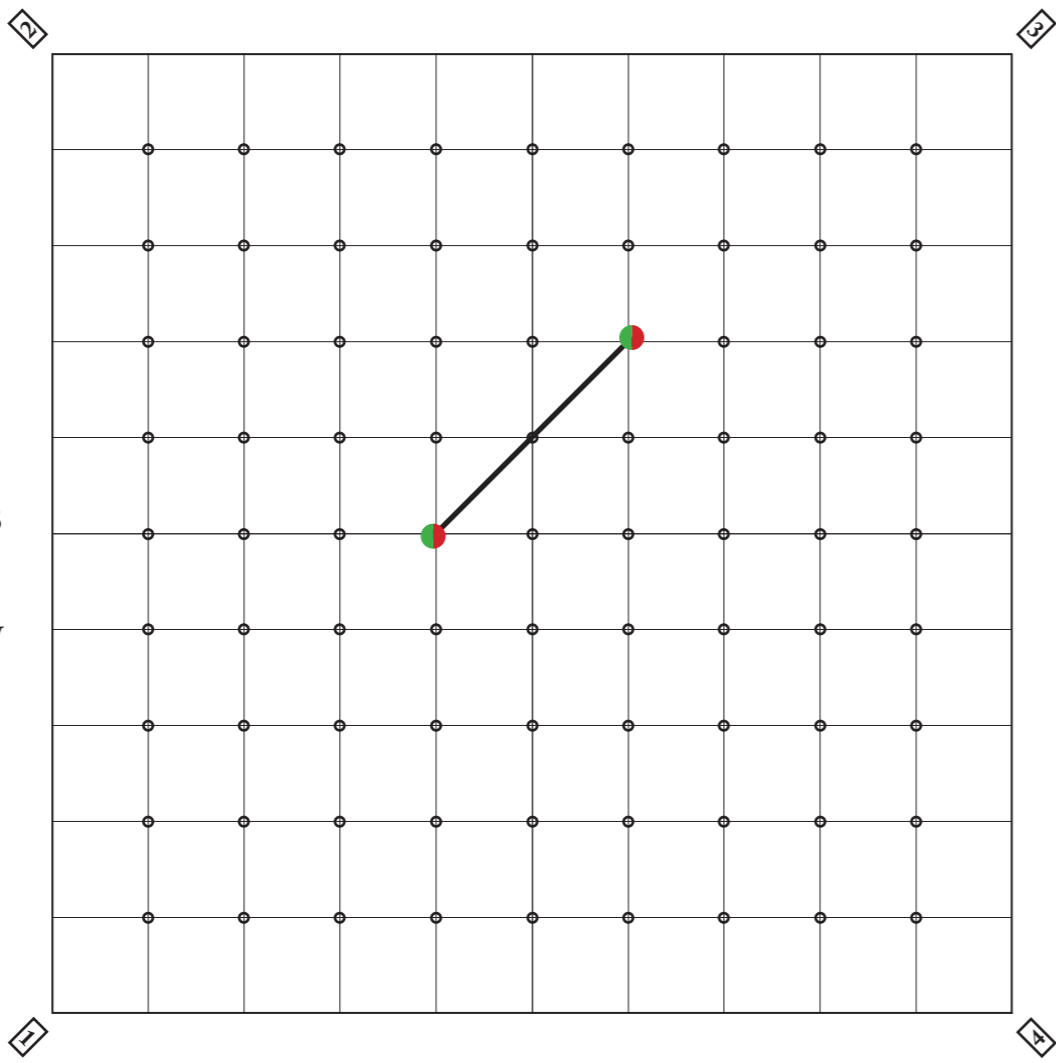
C - 1 - C

Very Slow



C - 1 - B

Very Slow



C - 1 - D

Very Slow

