

Introduction

Cartesian Planes allow you to plot points on a graph depending on how far across, and how far up. We use the bottom right intersection of the graph as our starting point. This is known as the origin. To plot a point on the Cartesian plane we must take note of:

- How far across (horizontal) from the origin, the 'x-coordinate' and then
- How far up (vertical) from the origin, the 'y-coordinate'.

When writing the coordinate you always write (x-coordinate, y-coordinate).

Instructions

Game 1

In this game the defending players have been marked on the field. The path that the ball makes for the attacking team is also shown.

1. What are the coordinates of each of the defending players?

Player Number	Coordinates
1	(1,4)
2	(5,)
3	
4	
5	

2. What are your predicted coordinates of the attacking players?

Player Number	Coordinates
1	(3,2)
2	
3	
4	
5	

Game 2

A lazy opposition coach has left their team's playbook at the ground, allowing you access to how they will set up defensively in the match.

Aim: Score a goal!

Rules:

- 5 attackers v 5 defenders
- Defender coordinates (2,2), (4,4), (5,7), (3,8) and (6,10). There is no goal keeper.
- The soccer ball starts at (5,1). You must also have one of your attackers at that coordinate.
- Every attacking player must touch the ball.
- You can pass diagonally.
- If your pass from player to player passes through the four boxes that intersect a defender, then they intercept the ball and you must start again placing your attackers at new coordinates.



Solution:

1. **What were the coordinates of the attacking players that resulted in a successful goal? Try to get two different solutions.**

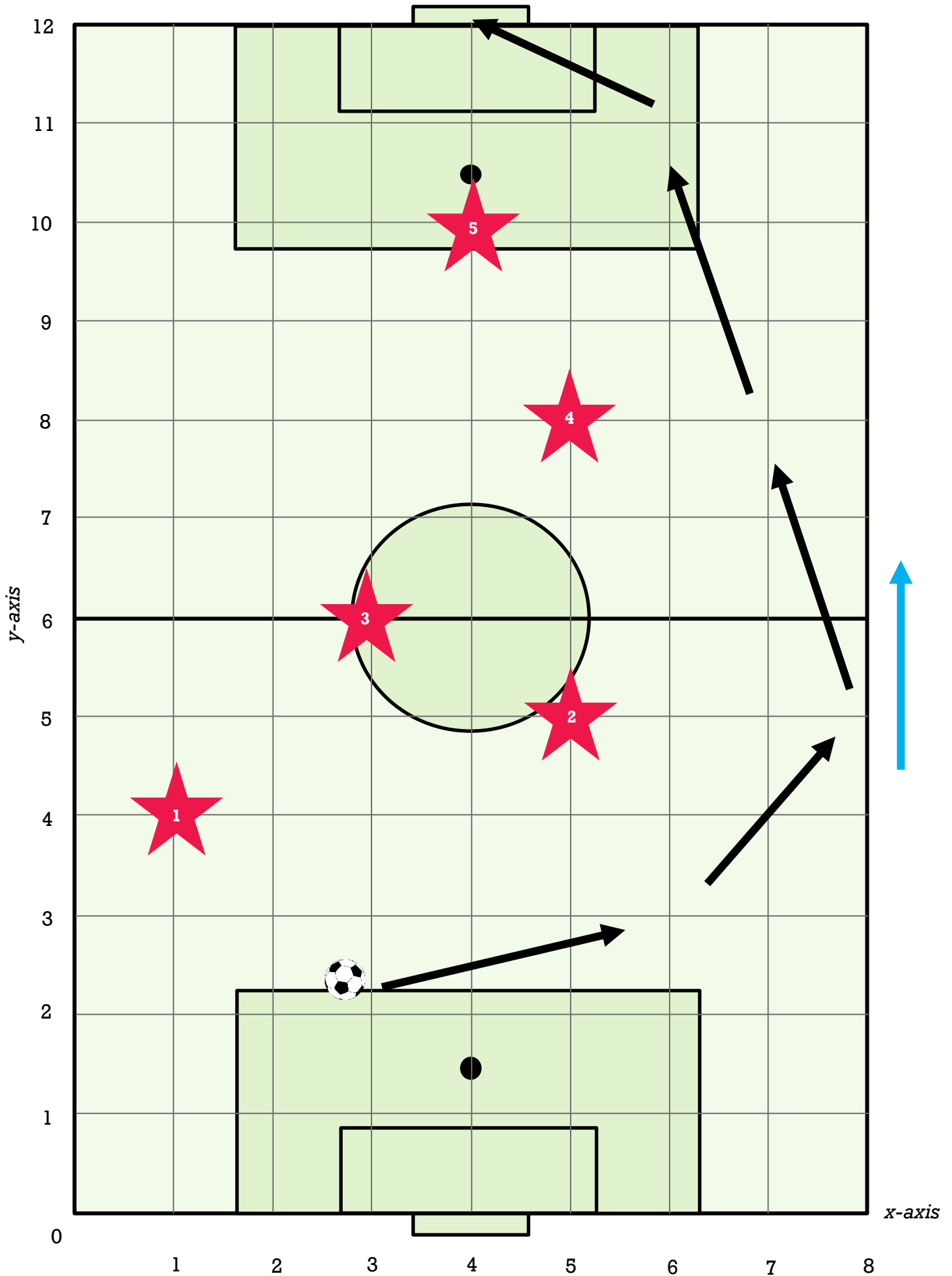
Player Number	Coordinates
1	
2	
3	
4	
5	

Player Number	Coordinates
1	
2	
3	
4	
5	

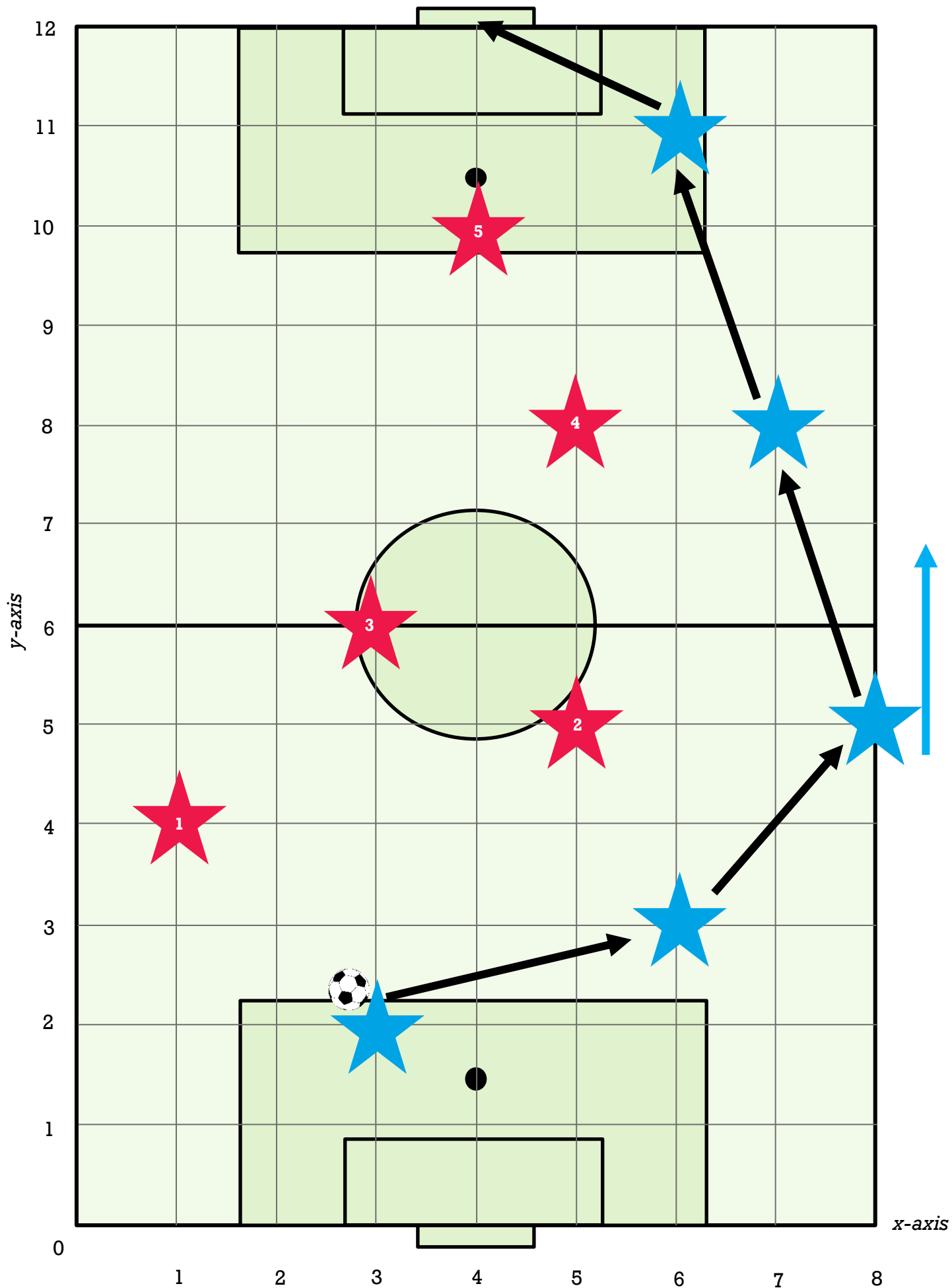
Extension Activities

- Set-up a challenge with one of your class mates where you place the defenders and they need to try and score a goal.
- Change and adapt the rules to make it more challenging e.g. more defenders or further restrictions on passing.
- Use the four quadrant Soccer Pitch Cartesian Plane, set up new defender coordinates and try to score a goal.
- Create a 3D visual model of your "Coordinate Soccer" game. You could even do your very own commentary!

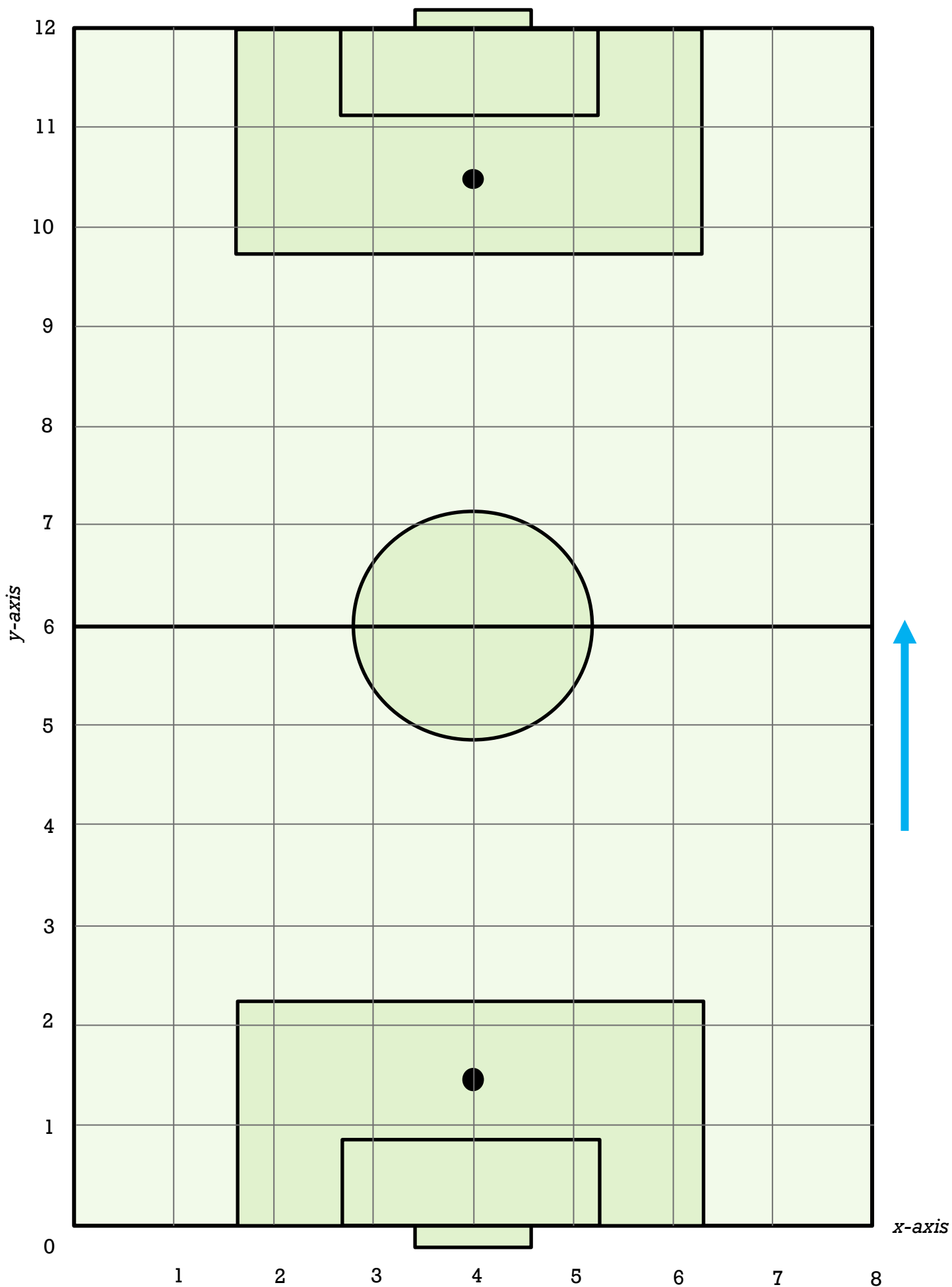
Game 1



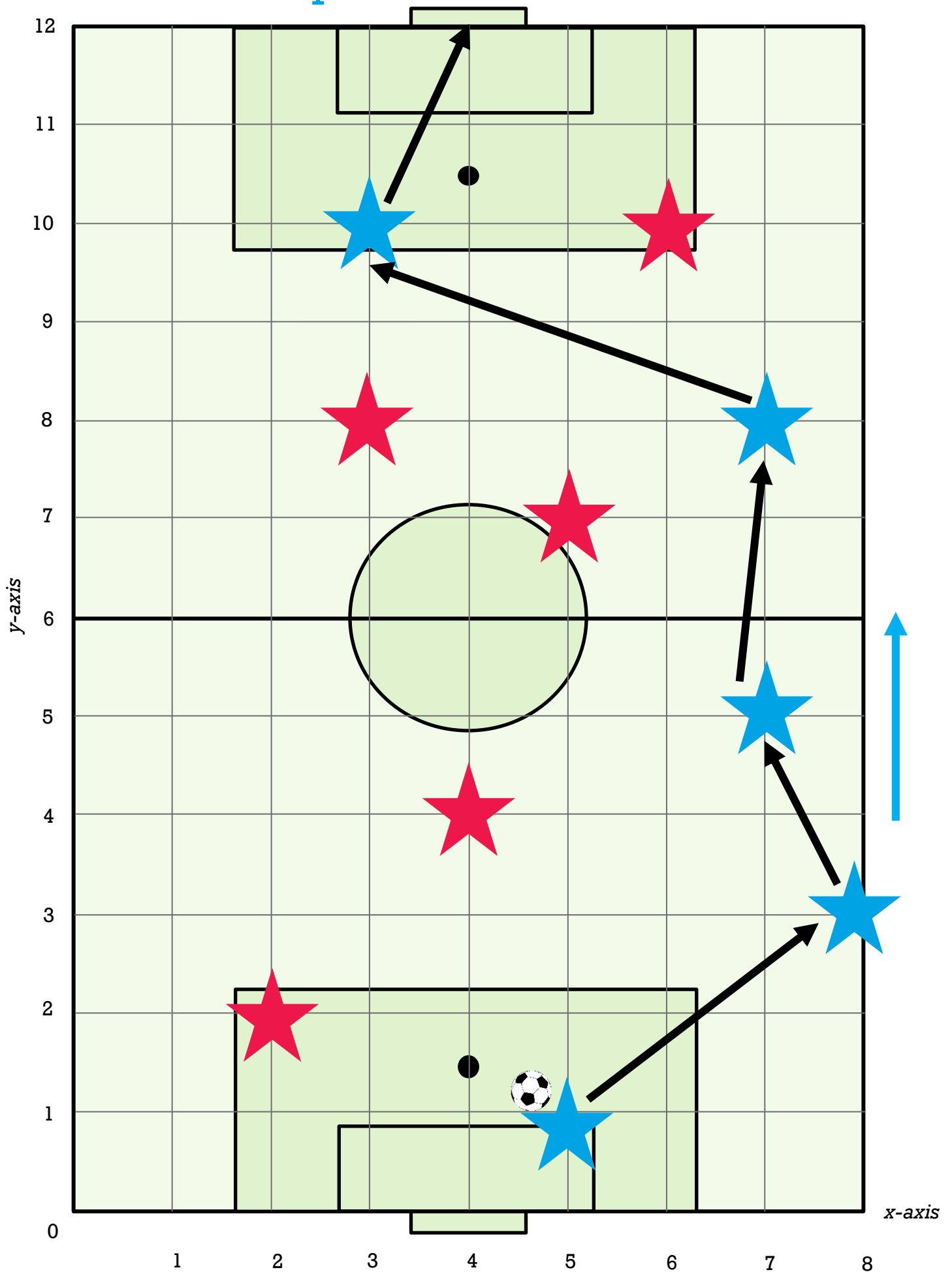
Game 1 – Example Solution



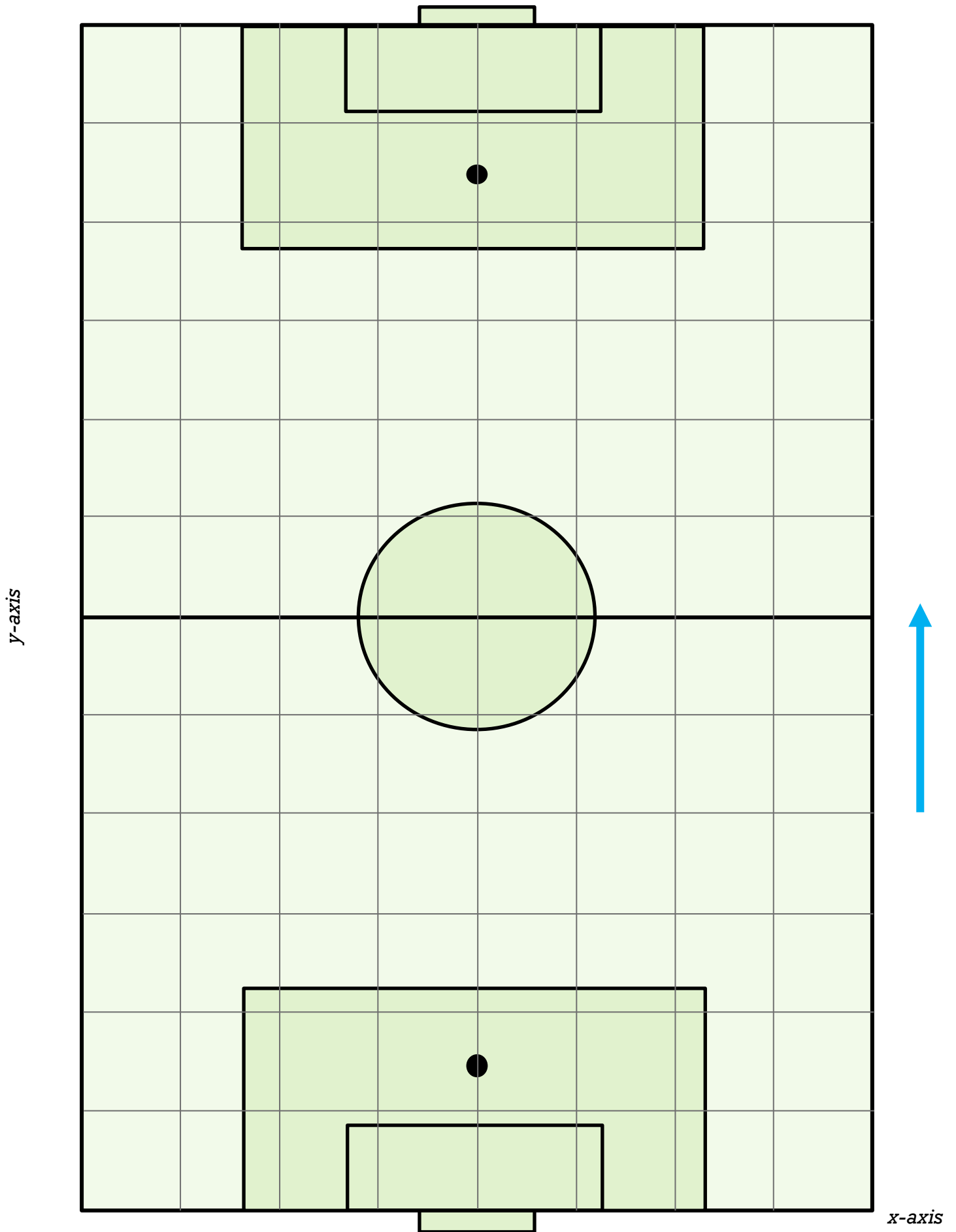
Game 2



Game 2 – Example Solution



Soccer Pitch Cartesian Plane – One Quadrant; No axis



Soccer Pitch Cartesian Plane – Four Quadrants

