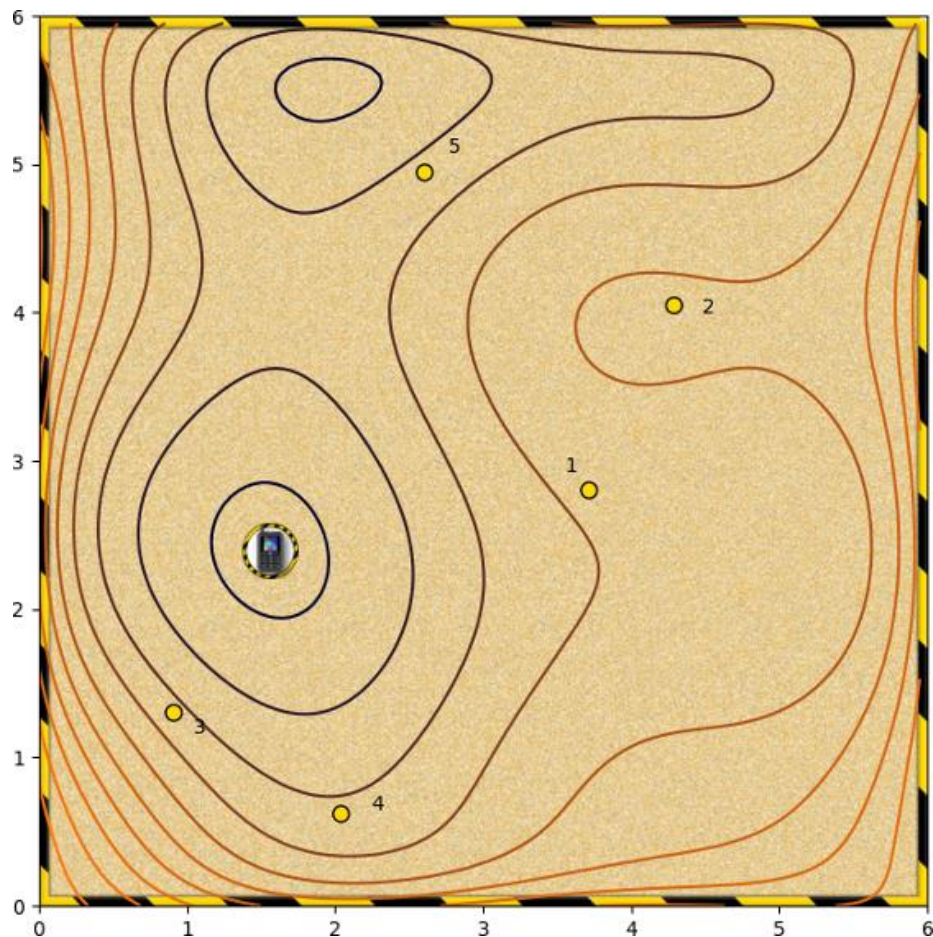# Optimisation scenarios

LATEST SUBMISSION GRADE

100%

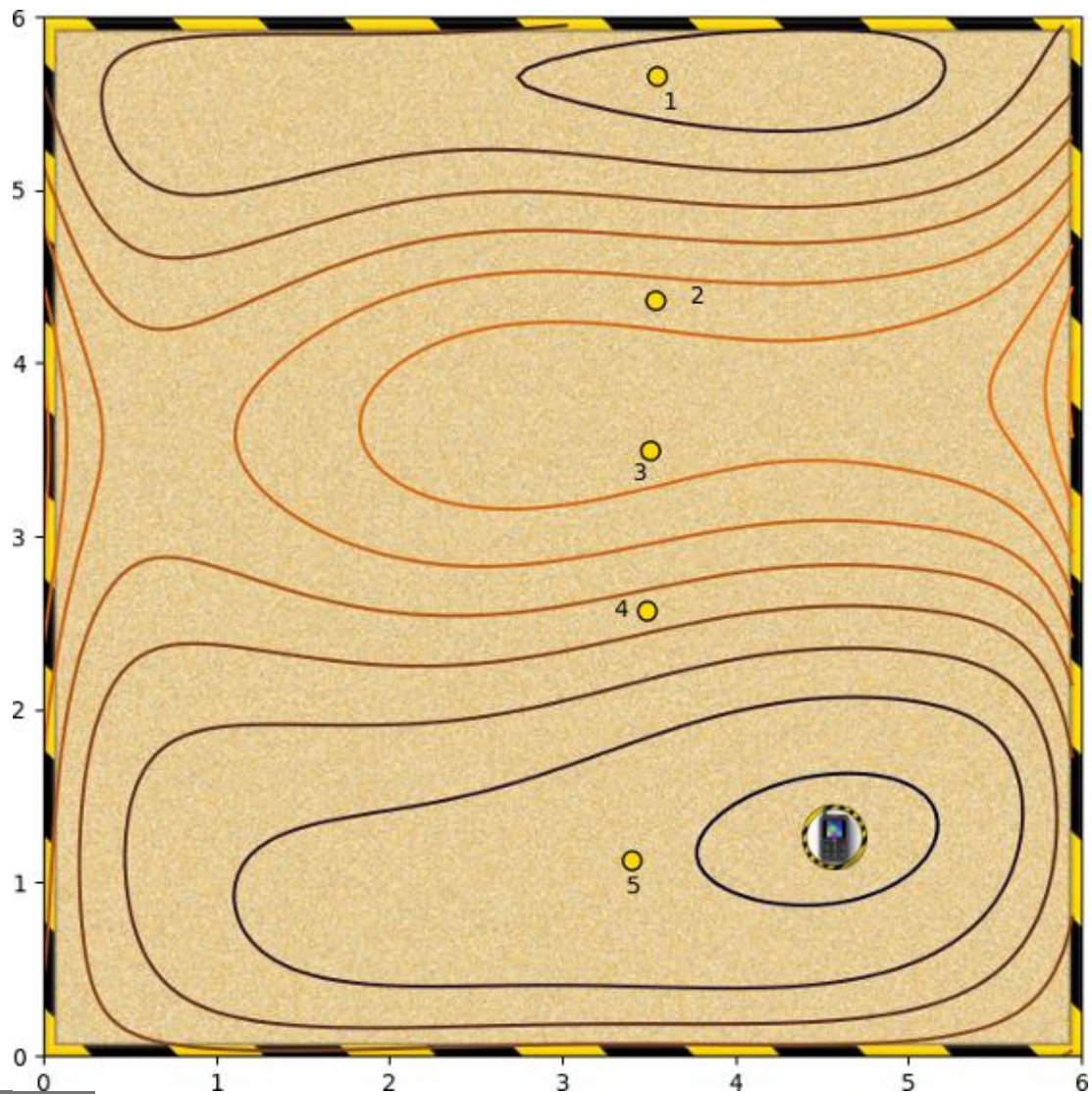**1.Question 1**
Given the following contour plot,

Which starting points (from 1 to 5) are likely to converge to the global minimum (shown by the mobile phone) when using a steepest descent algorithm?

1 / 1 point

- ☑ Starting point 1
- ☐ Starting point 2
- ☑ Starting point 3
- ☑ Starting point 4
- ☐ Starting point 5
- ☐ None of the above

2.Question 2

Again, which starting points converge to the global minimum?
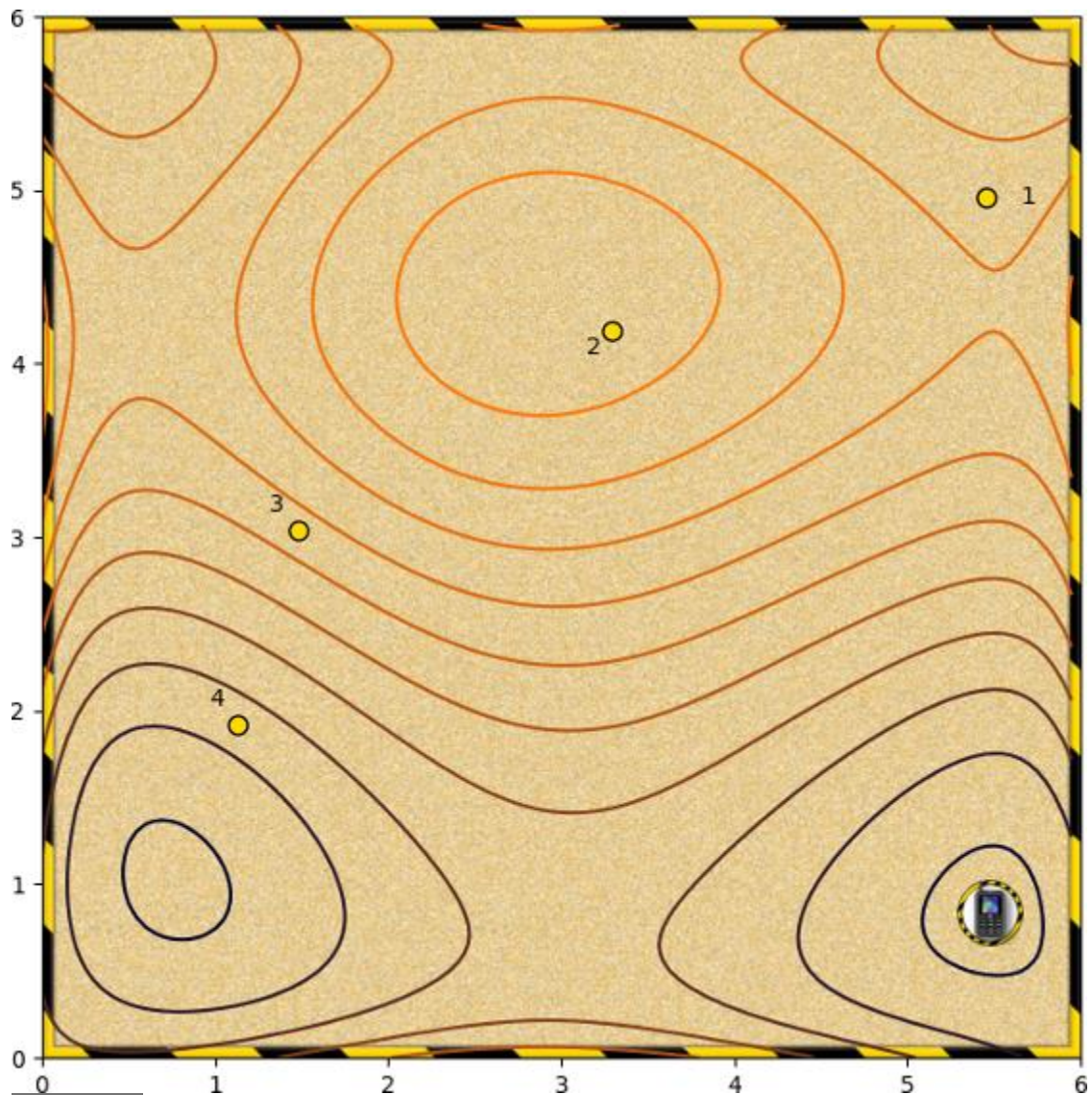
- ☐ Starting point 1
- ☐ Starting point 2
- ☑ Starting point 3
- ☑ Starting point 4
- ☑ Starting point 5
- ☐ None of the above

3.Question 3

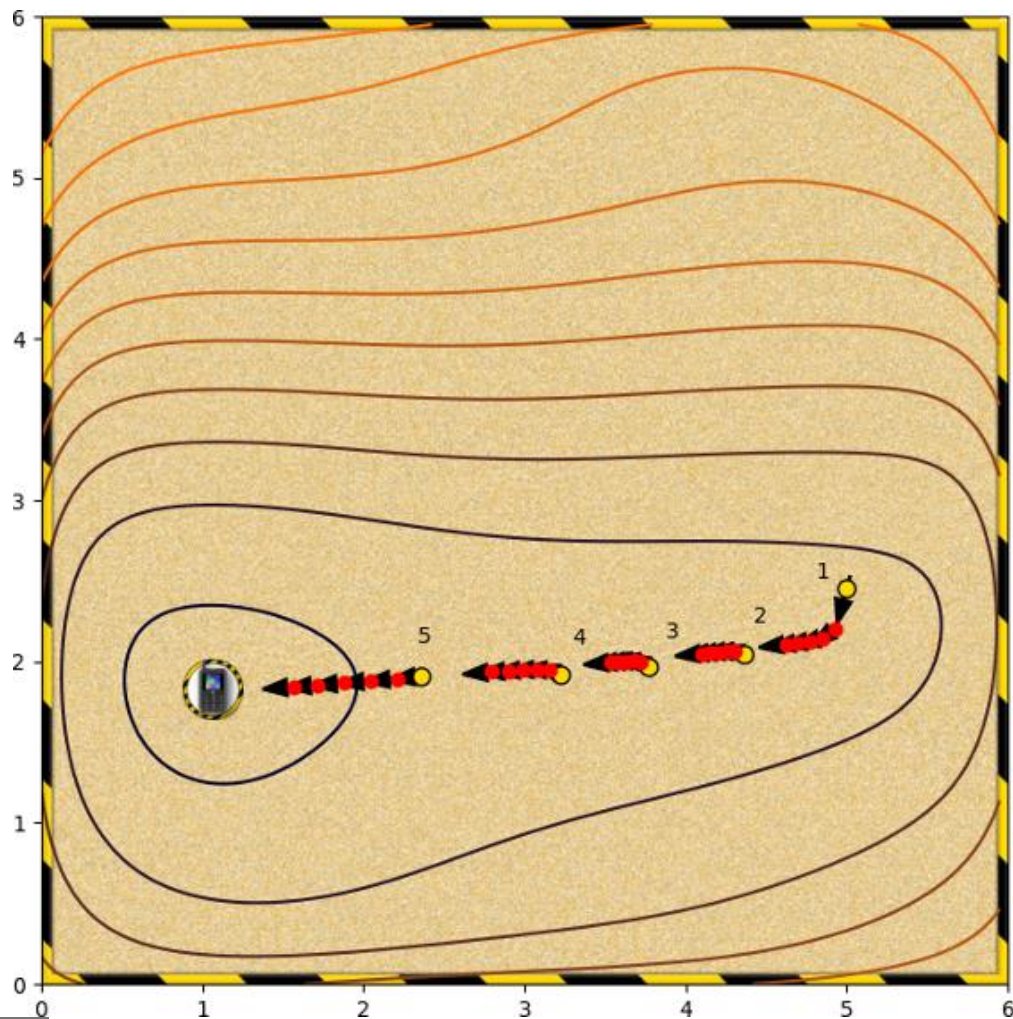**Which starting points converge to the global minimum?**

☐ Starting point 1

☑ Starting point 2

☐ Starting point 3

☐ Starting point 4

☐ None of the above

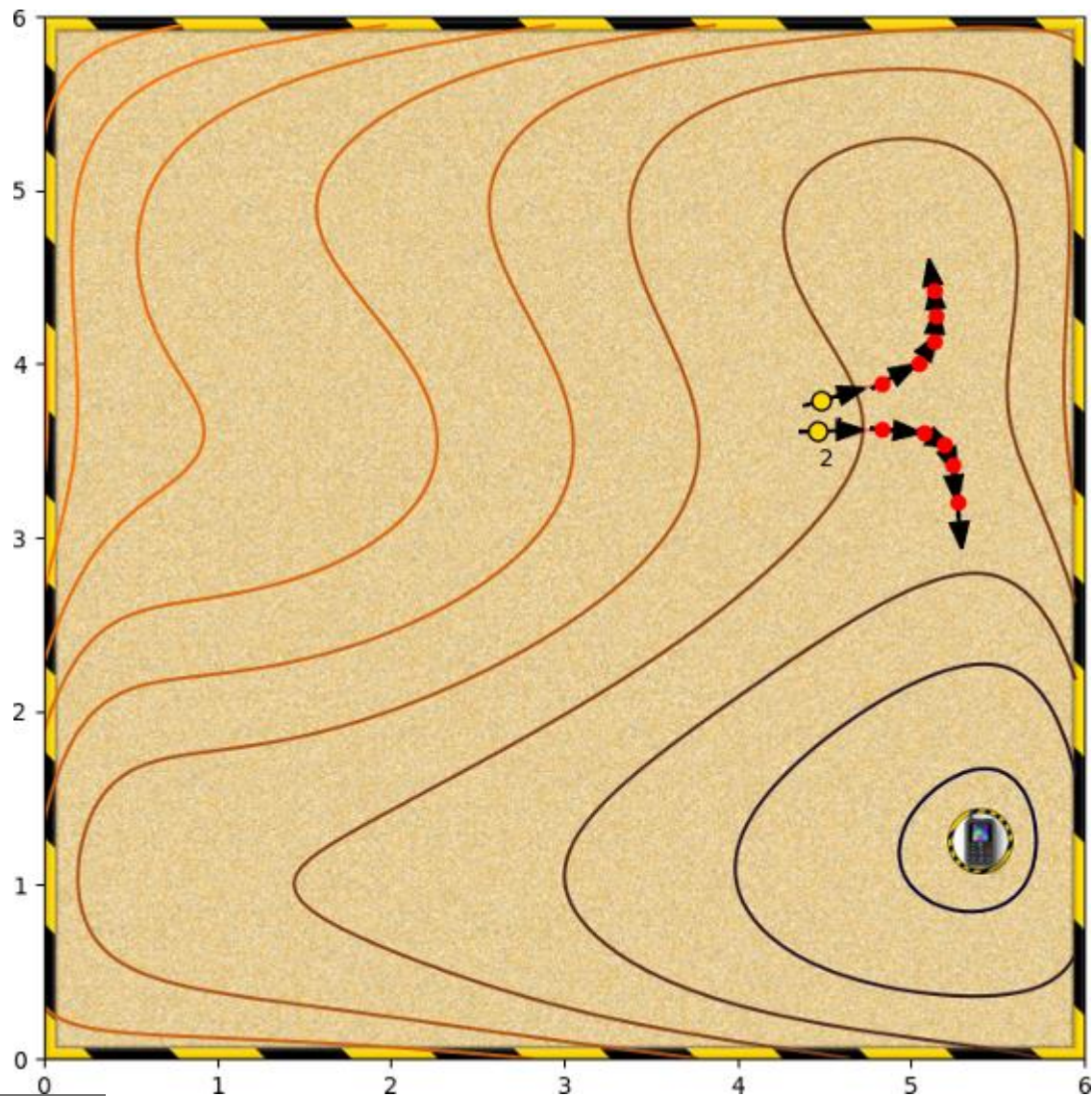**4.Question 4**

What's happening in this gradient descent?

- ⦿ The global minimum is in a wide and flat basin, so convergence is slow.
- ○ The algorithm is getting stuck near saddle points.
- ○ The algorithm is getting stuck near local minima.
- ○ None of the other options.
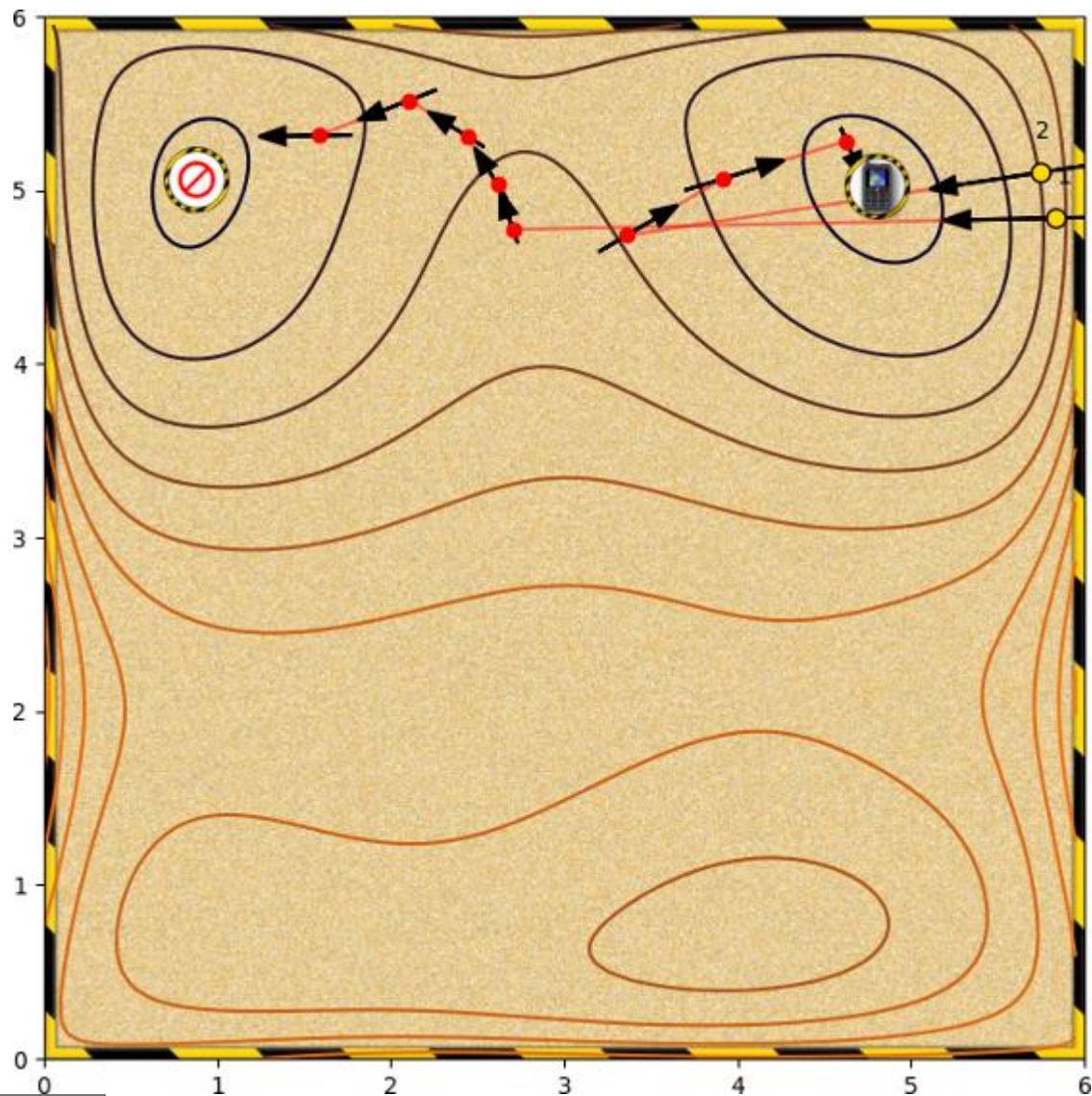
5.Question 5

What is happening here?

- ◉ The algorithm is passing either side of a saddle point.
- ○ The algorithm is passing either side of a local maximum.
- ○ None of the other options.
- ○ The algorithm is passing either side of a local minimum.
- ○ There is noise in the system.

6.Question 6
What is happening here?

○ There is noise in the system

○ The marked points are saddle points.

○ None of the other options.

◉ The Jacobian at the starting point is very large.