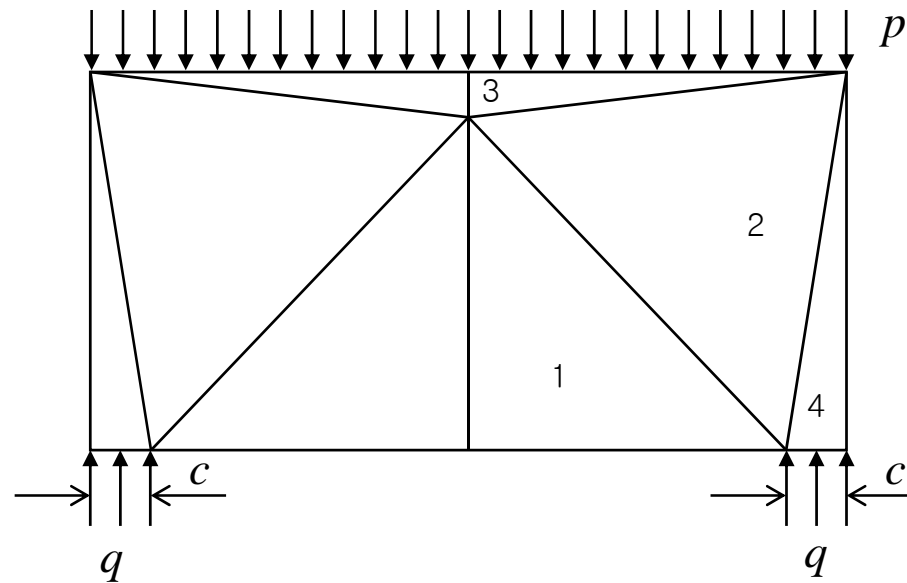
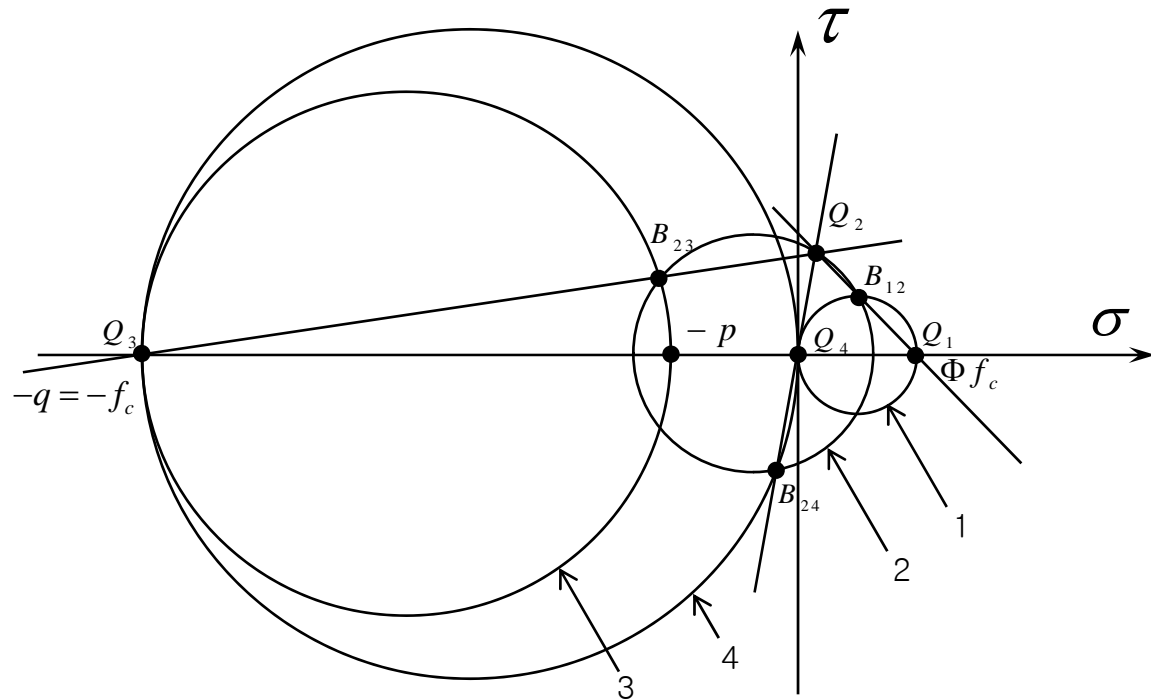
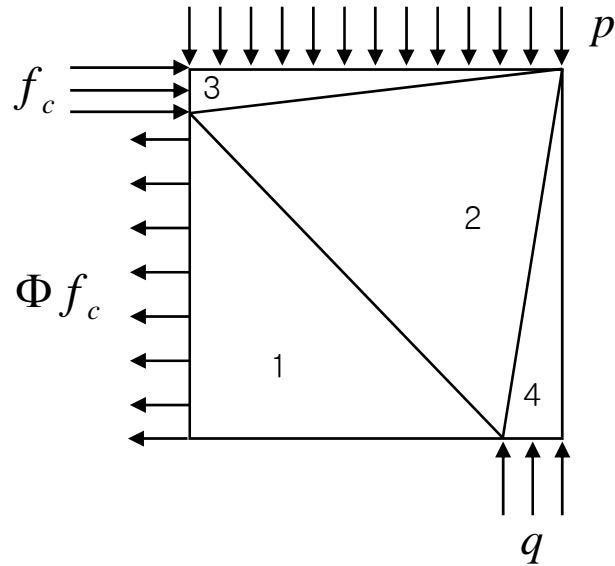


Concrete Plasticity

Object : Find a safe solution through the stress field approach
Conditions : isotropic and homogeneous reinforcement



Concrete Plasticity

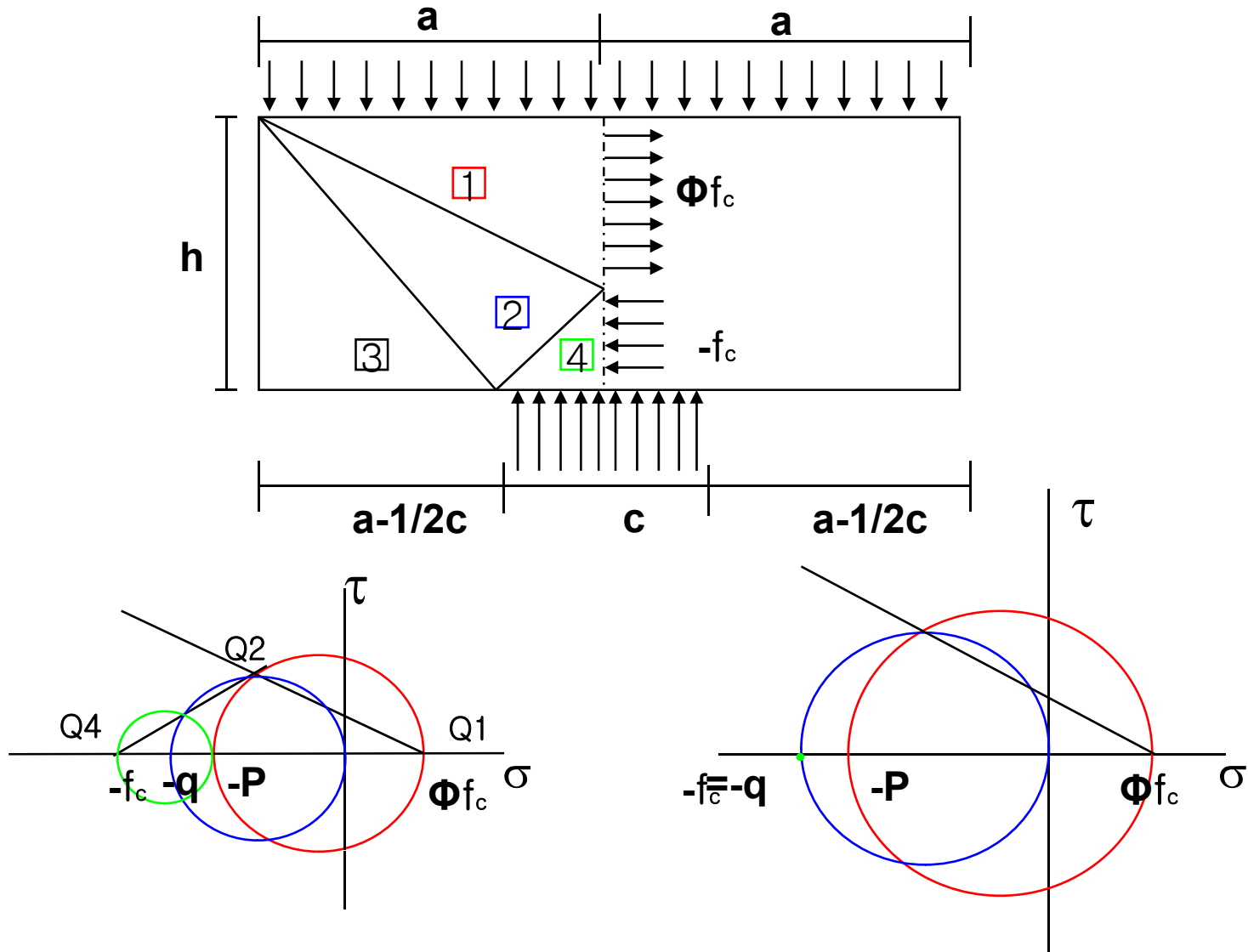


Q_i : Pole Point of circle i

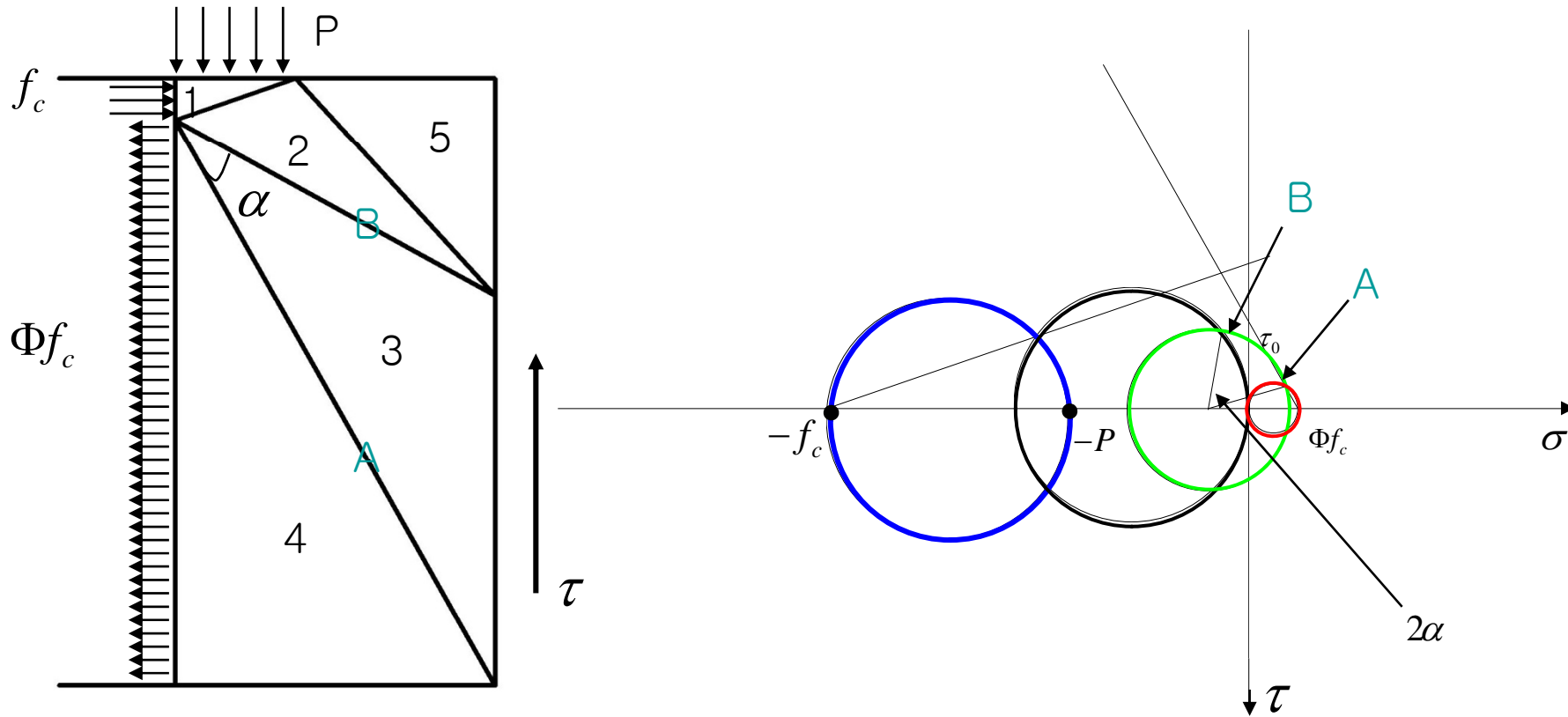
B_{ij} : Boundary stress point between i and j

1. To maximize p, assume $q = f_c$ and construct the admissible stress field
2. Draw circle4 and circle1, and find B_{24} and B_{12} with parallel lines
3. Draw circle2 and find B_{23}
4. Draw circle3 and find a safe solution, p
5. If there is no admissible stress field, assume the reduced q
or control the reinforcement ratio (the depth of compression zone)

Concrete Plasticity



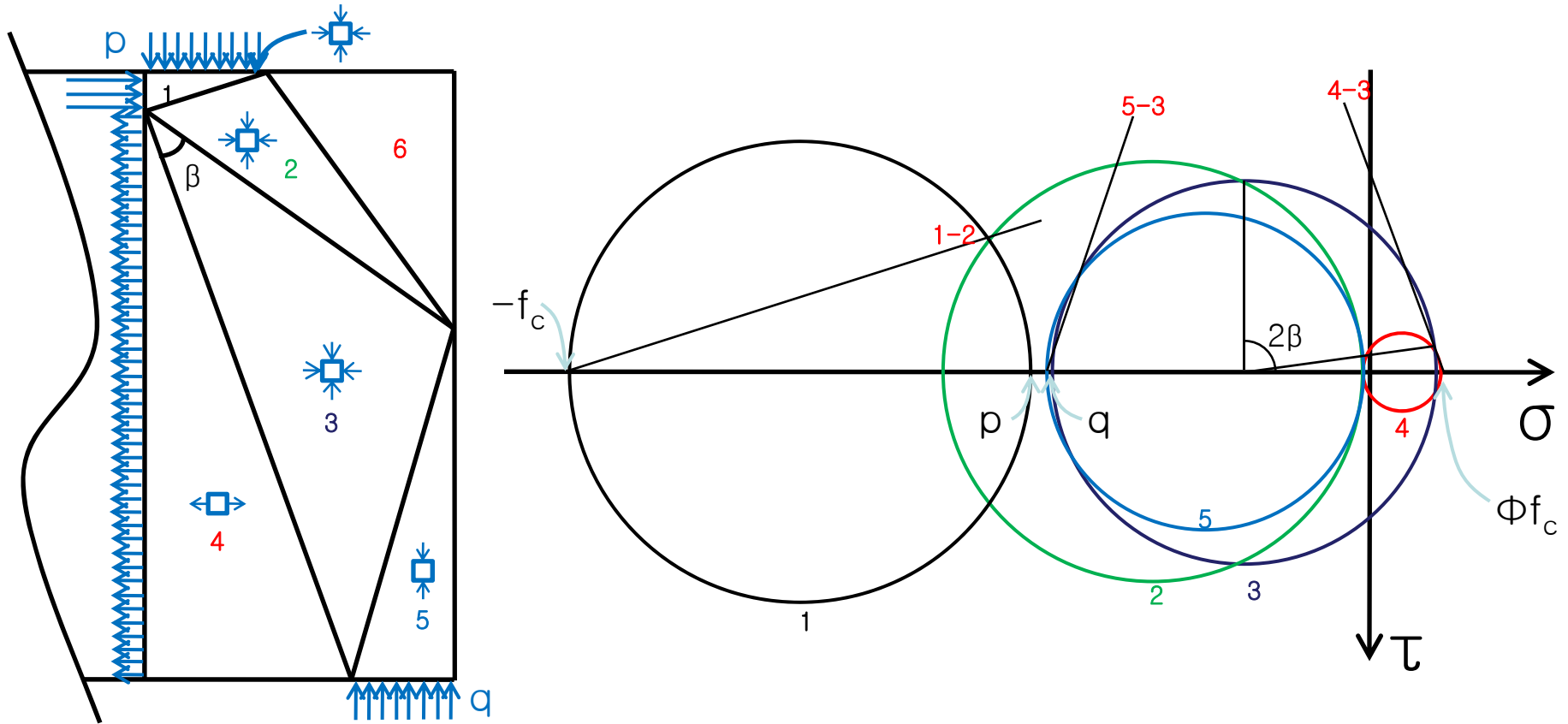
Concrete Plasticity



- ① ② ③ ④

P_{\max} 를 만들기 위해서
 1번 원의 크기가 작아지고, τ_0 값이 커져야 한다.
 \rightarrow 3번 원이 커지고 \rightarrow 2번 원이 커지면 $\rightarrow P_{\max}$

Concrete Plasticity



Maximum P 값을 가지기 위해서는..

- 5번 원이 더 커져야 한다. (q값이 더 커져야 한다)
 - 3번 원이 커진다 → 2번 원이 커진다 → 1번 원이 작아지게 된다
 - p 값이 커지게 된다