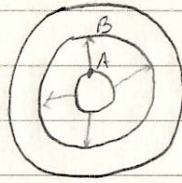# Associated Flow Rule - Simple Explanation

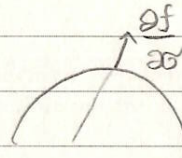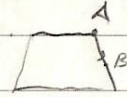*** The ball & moutain:**

. Put the ball on the moutain; it will not move.

. Put the ball on the ridge of the moutain it will fall down along the edge

. The direction of the movement of the ball will be perpendicular to the couter line

. Same thing happens with the expansion of the yield surface, the direction of the expansion of the yield surface will ⊥ to the surface

. The ball drops from A to B b/c of the haight (energy)

$$d\varepsilon_{ij}^{P} = \lambda \frac{\partial f}{\partial \sigma_{ij}}$$

$$f(x,y) \sim \left(\frac{\partial f}{\partial x}, \frac{\partial f}{\partial y}\right)$$

recto $\acute{a}p$ luyến

$$a \quad \left(\frac{\partial f}{\partial x}, \frac{\partial f}{\partial y}\right)$$

granty constant

* Why associated flow rule?

Not correct, but the assumption $f \equiv g$ is simple for calculation.

If you don't believe in associated flow rule, you can use non-associated flow rule, but very complicated To solve this complicated job, we need more assumption. So, it is still not perfectly correct and no one can assure that their assumption is better than our assumption.
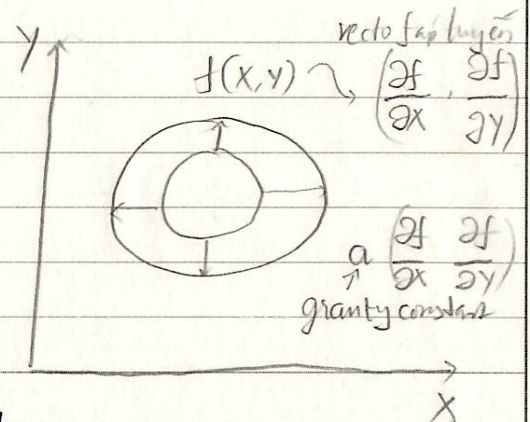
Simple assumption → simple | calculation easy to use

⇒ POPULAR

Complicated assumption → difficulto to explain difficult to use

⇒ NOT POPULAR