_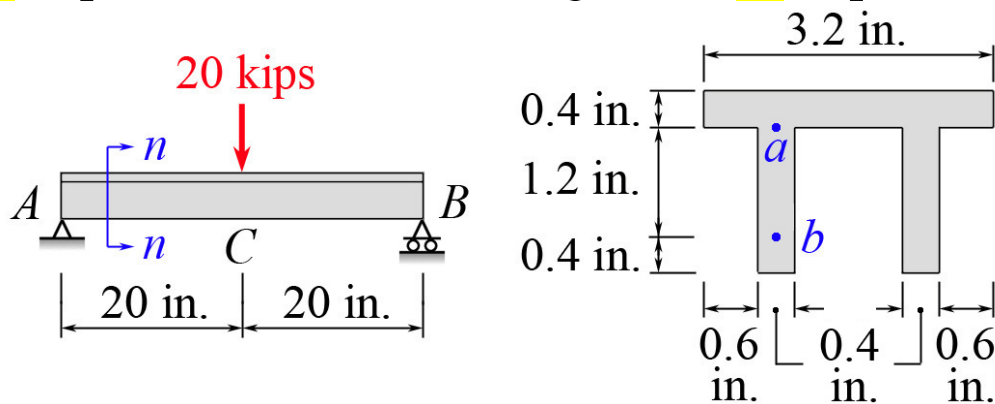A_. ② Describe the **principle of moments**. **_B_.** ⑧ For the beam shown, consider section *n-n* and determine (*a*) the shearing stress τ_a at point *a*, (*b*) the shearing stress τ_b at point *b*.

_A_. The **principle of moments** states that the **_resultant_** is equal to the sum of the components, and the **_moment of the resultant_** is equal to the sum of the moments of the components about same point, axis, or plane. ②
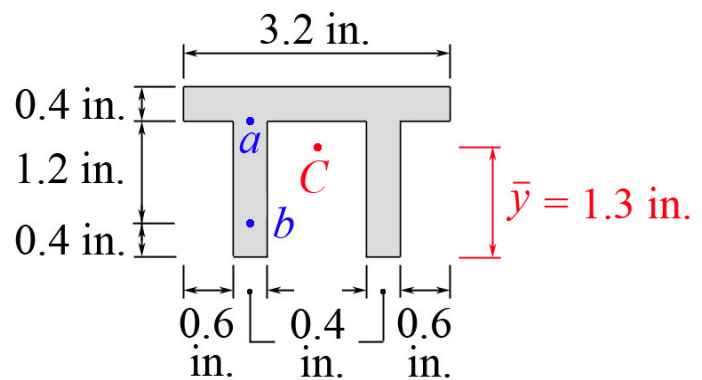
_B_. POM: $\bar{y}(2.56)=1.8(1.28)+0.8(0.64)+0.8(0.64)$, ∴ $\bar{y}=1.3$ in. ②

PAT: $I=\frac{1}{12}(3.2)(0.4)^3+1.28(0.5)^2+2[\frac{1}{12}(0.4)(1.6)^3+0.64(0.5)^2]$

$$\therefore\ I=0.9301\dot{3}\ \text{in}^4\ \text{②}$$

(*a*) $\tau_a=\dfrac{VQ}{It}=\dfrac{10000[0.5(1.28)]}{0.9301\dot{3}(0.4+0.4)}=8600.92$ $\tau_a=8.60$ ksi ②

(*b*) $\tau_b=\dfrac{VQ}{It}=\dfrac{10000[1.1(0.16)]}{0.9301\dot{3}(0.4)}=4730.50$ $\tau_b=4.73$ ksi ②