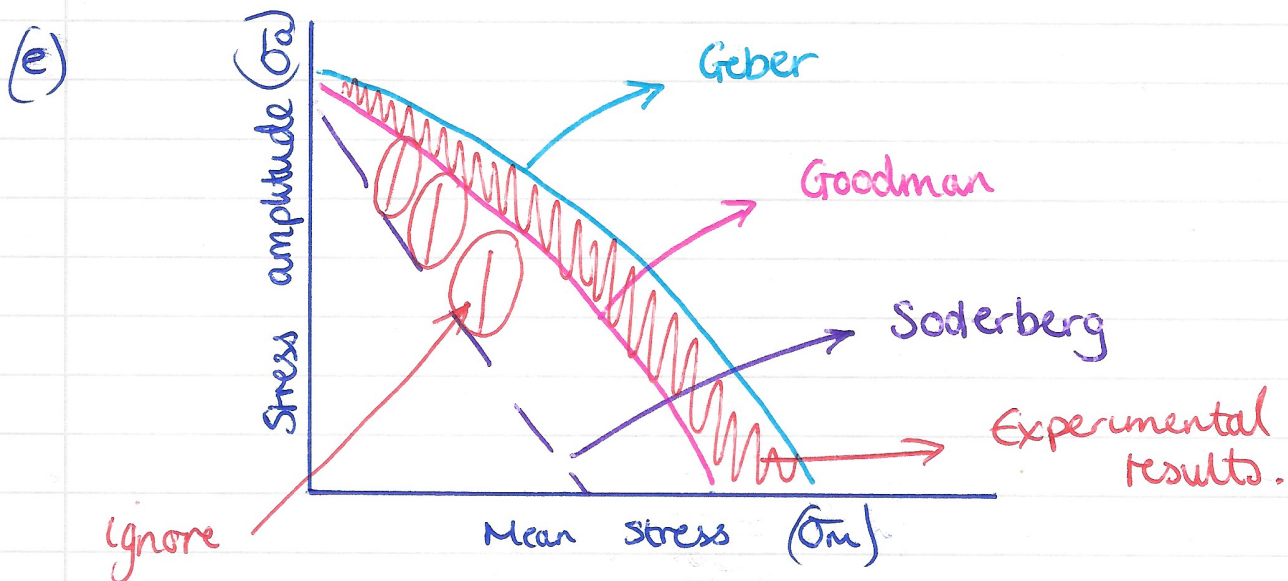


Question 4 continued...

- (d) Please see diagram on part (c). As mean stress of a specimen is increased, the fatigue life is decreased. If a component is tested with a higher mean stress, in order to see a similar fatigue life to a component with a lower mean stress, then the stress amplitude must be reduced. In other words, the relationship between mean stress and fatigue life is inversely proportional.



Goodman $\sigma_a = \sigma_N \left[1 - \left(\frac{\sigma_m}{\sigma_{TS}} \right) \right]$

Geber $\sigma_a = \sigma_N \left[1 - \left(\frac{\sigma_m}{\sigma_{TS}} \right)^2 \right]$

Soderberg $\sigma_a = \sigma_N \left[1 - \left(\frac{\sigma_m}{\sigma_y} \right) \right]$