Material structure vs. Mechanical Behavior total 15 points

1. Problem 6.2 pp 245 (Class text; Shackelford, 2001)
2. Problem 6.4 pp 245 (Class text; Shackelford, 2001)
3. Problem 6.5 pp 245 (Class text; Shackelford, 2001)
4. Using the scale of Brinell hardness (pp220-Tab 6.10), which is a n equivalent for 
   \( H = \frac{P}{A} \), solve problem 6.47 pp 248 (Class text; Shackelford, 2001)
5. Using the attached stress-strain curve for brass, evaluate the following.
   (a) Yield strength
   (b) Tensile strength
   (c) Fracture stress
   (d) Ductility
   (e) Toughness
6. Using the same stress-strain characteristics, if you stretch a bar of this brass such that 
   the final cross sectional area is reduced by 20%.
   (a) What would be the expected yield strength of the stretched bar?
   (b) Do you know a technical name of this process?
   (c) What type of microstructure would you get after stretching?