1. Anderson problem 2.12 (section 13.2). For Single Edge Notched Bend (SE(B)) speciman use $S = 4W$. Note that for single Edge Notched Tension specimen $f(a/W)^*$ is,

$$f\left(\frac{a}{W}\right)^* = \frac{\sqrt{2\tan\frac{\pi a}{2W}}}{\cos\frac{\pi a}{2W}}\left[0.752 + 2.02\left(\frac{a}{W}\right) + 0.37\left(1 - \sin\frac{\pi a}{2W}\right)^3\right] \quad (1)$$

   The handbook H Tada, P.C. Paris, G.R. Irwin, Stress Analysis of Cracks Handbook, 3rd ed., ASME Press. 2000 is a good reference for SIFs.

   (**60 Points**)

2. Anderson problem 2.16 (section 13.2). Continuation:

   - Compute energy release rate for arbitrary angle β for plane stress condition.
   - Assume a constant fracture toughness G_c. Obtain a relation between a_{ini}, σ_1, σ_2, and G_c where a_{ini} is the initiation crack length.
   - For $\sigma_1 = 2\sigma_2$ obtain the angle β_c that corresponds to smallest crack length a_{ini}. Obtain corresponding a_{ini}.

   (**100 Points**)

3. Anderson problem 2.17 (section 13.2) (**50 Points**)

4. Anderson problem 2.20 (section 13.2) (**40 Points**)