Problem Session 7

This problem will reinforce what you have learned about **fatigue** and **multi-axial fatigue**.

The bracket shown below is subjected to a sinusoidal force where F_{max} = 50 N and F_{min} = 0 N. Find the stress states at points A and B and choose a ductile steel or aluminum that will give a factor of safety of 2 for infinite life if steel is selected and N=5E8 if aluminum is selected. Assume the **theoretical stress concentration** for bending is 2.8 and for torsion is 3.2.

L	=	100 mm
a	=	400 mm
t	=	10 mm
h	=	20 mm
F_{max}	=	50 N
F_{min}	=	0 N
od	=	20 mm
id	=	14 mm