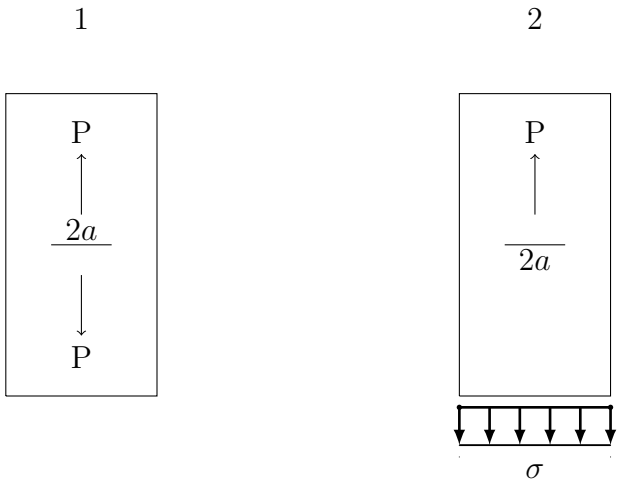
Name:

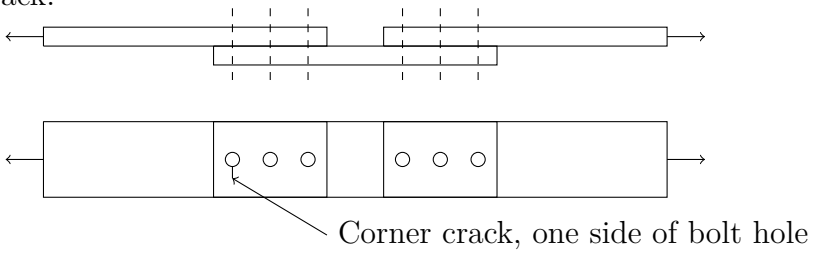
Homework 2

Due Feb 6 2020

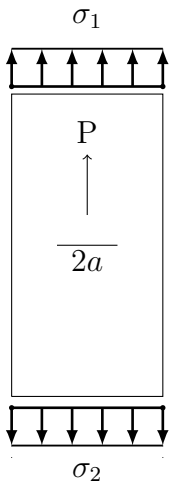
1. Determine the expression for stress intensity
   (a) In panel 1
   (b) Use superposition to determine the stress intensity in panel 2



2. For the splice shown, use superposition and suggest a method to estimate the stress intensity at the corner crack.

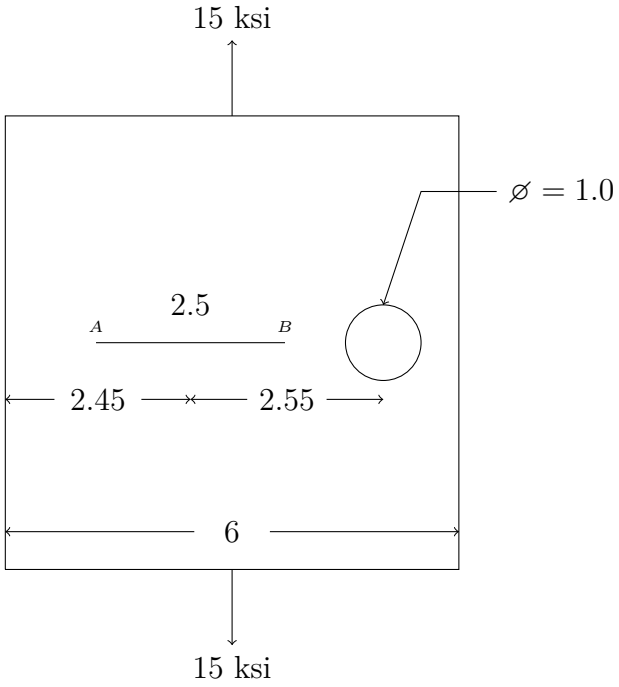


3. Determine the stress intensity for the panel shown



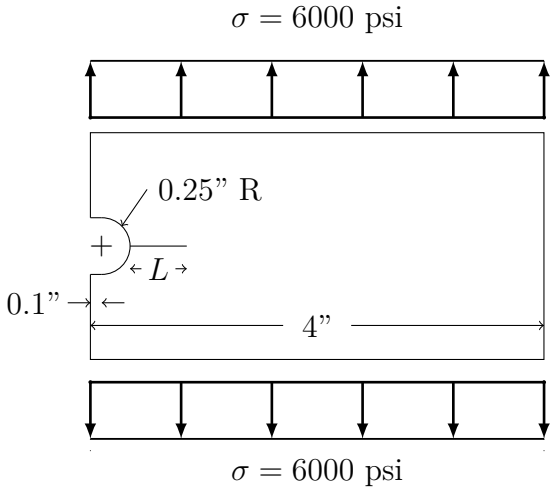
4. Determine the stress intensity factor at each of the crack tips (A and B). Compare Method 1 and Method 2, comment on the expected accuracy of this stress intensity factor.

Note: all linear dimensions in inches, unless otherwise specified



5. Estimate the stress intensity if the crack at the notch has a length L of
   (a) 0.4”
   (b) 0.05”

   The thickness is 0.375”



6. Find the stress intensity factor at both crack tips (in terms of σ) for the given geometry

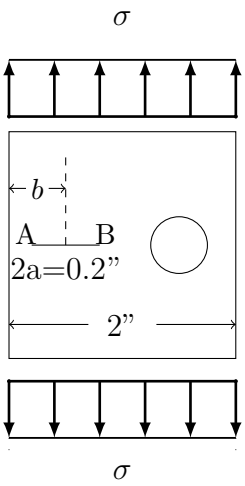


Figure 1: off-center crack, near a hole, $b = 0.3$”, hole diameter = 0.6”, spaced 0.5” from crack tip B.