1) _____ is a measure of a force distributed over an area.
   a. Force   b. Stress
     c. Resistance   d. Equilibrium

2) $10^6 \, \text{N/m}^2$ is a unit equivalent to:
     a. Mega-Pascals (MPa)   b. Giga-Pascals (GPa)
     c. Joule (J)   d. Kilowatts (kW)

3) What is the best description of σ_{allow}?
       a. the amount of stress a material can take before it breaks
       b. the amount of stress a material can take before it bends
       c. the amount of stress a material can take including a factor of safety
       d. the amount of force a material can take before it breaks

**Thanks to fellow SI Leader Katelyn Harnage for letting me use her MC questions!**

4) GIVEN: Wooden member under tension with scarf joint. P = 2400 lb
   REQ'D: Shear and normal stresses in joint.
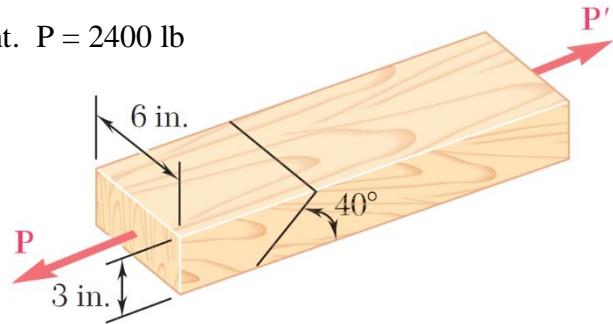
5) GIVEN: The rectangular plate is deformed into
            the shape of a parallelogram as shown.
    REQ'D: Shear strain at corners A and B.
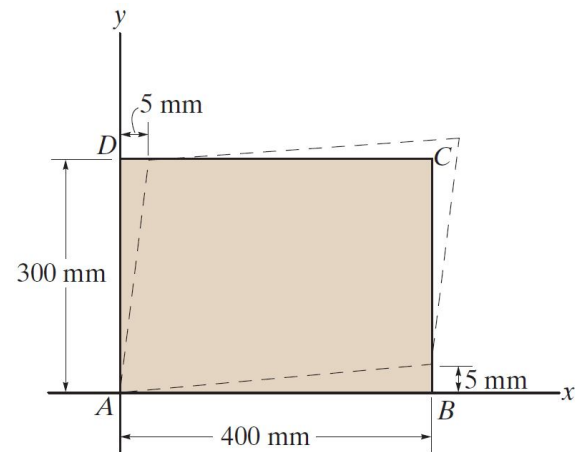
6) GIVEN: Wooden hook failed in shear along the
dashed line when P = 8 kN.

REQ'D: Average shearing stress at failure.

15 mm

P'

P

Steel   90 mm   Wood

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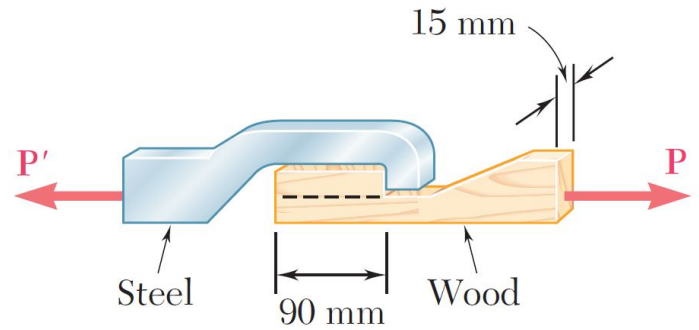
7) GIVEN: Cylindrical rods AB and BC are welded together at B and loaded as shown.

3 in.

2 in.   30 kips   B   C

A

P = 40 kips

30 kips

30 in.   40 in.
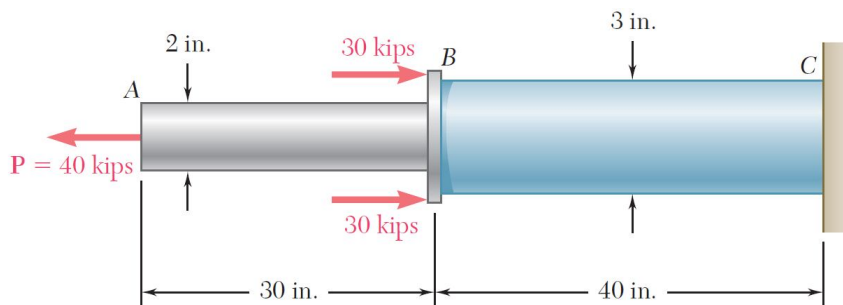
REQ'D: A) Average normal stress in section AB.
B) Average normal stress in section BC.
C) Also, find the axial strain in each segment if ΔL_{AB} = 0.0127 in and ΔL_{BC} = 0.00377 in.

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8) GIVEN: ⌀ 0.5 in bolt connecting two 0.5 in thick plates.

REQ'D: Bearing and shear stresses if F = 1000 lbs.

C

E   A   F

B   E'

F'

D