# COE-C2001 - Foundations of Solid Mechanics
# Assignment for Week-4

(1) Deadline: 12:00, Monday, November 29, 2021
(2) Free format submission

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1. For the given state of stress as shown in **Fig.1**, determine (a) the principal planes, (b) the principal stresses, (c) the maximum shearing stress and the corresponding normal stress. (25 points)

2. Determine the normal stress and shear stress acting on the inclined plane *AB* in **Fig.2**. Solve the problem using the stress transformation equations. Show the result on the sectioned element. (25 points)

3. For the given state as shown in **Fig.3**, determine the equivalent state of stress on an element at the same point oriented *30°* clockwise with respect to the element shown. Sketch the results on the element. (25 points)

4. For the given state as shown in **Fig.4**, determine the equivalent state of stress on an element at the same point oriented *60°* clockwise with respect to the element shown. Sketch the results on the element. (25 points)

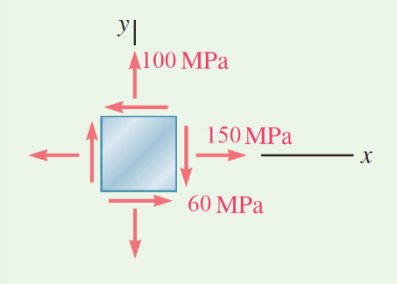


**Fig.1**

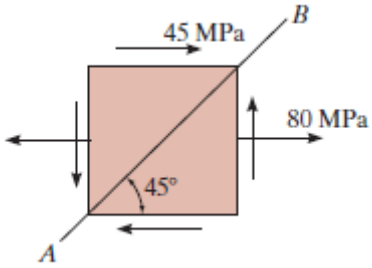


**Fig.2**

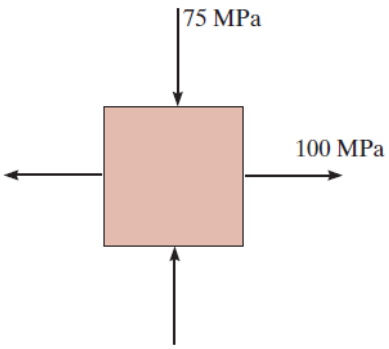


**Fig.3**

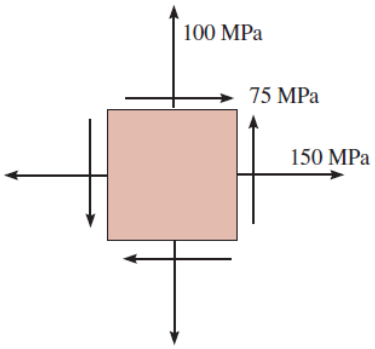


**Fig.4**