1) Determine the state of stress at point A on the cross section of the pipe at section a–a.

![Diagram](image1.png)

2) A vertical force P of magnitude 60 lb is applied to the crank at point A. Knowing that the shaft BDE has a diameter of 0.75 in., determine the principal stresses and the maximum shearing stress at point H located at the top of the shaft, 2 in. to the right of support D.

![Diagram](image2.png)

3) F8–5. The beam has a rectangular cross section and is subjected to the loading shown. Determine the components of stress at point B.

![Diagram](image3.png)
4) Determine the state of stress at point A on the cross section of the pipe assembly at section a–a.

5) Determine the state of stress at point A on the cross section of the shaft at section a–a.
6) Forces are applied at points A and B of the solid cast-iron bracket shown. Knowing that the bracket has a diameter of 0.8 in., determine the principal stresses and the maximum shearing stress at point H.

7) Three forces are applied to the bar shown. Determine the normal and shearing stresses at point a.