Shear Stress Practice Problems

1. A 15000 N force is applied to a block of aluminum in an aircraft structure in a shearing direction. How much does the block deform? The block of aluminum has a surface area of 10cm^2 and a height of 20cm.

2. A steel bolt has a 100500N shear force acting on it due to a horizontal load. How much distortion will the bolt experience if it has a cross sectional area of 1cm^2 and is 7cm long?

3. A concrete pillar has a shear force applied to it and as a result the pillar distorts by 1cm. The pillar is 3m tall and has a cross sectional area of 0.5m^2. How much force was applied to the pillar?