1-8. An element is subject to a normal stress $S \sim N(220, 20^2)$ psi and a shear stress $T \sim N(700, 70^2)$ psi as shown in the figure. If the element is oriented 30° clockwise from its current position, determine the distribution of the equivalent state of stress. Assume S and T are independent. (**Ans.** $\sigma_{y'} \sim N(441.2, 54.08^2)$ psi)