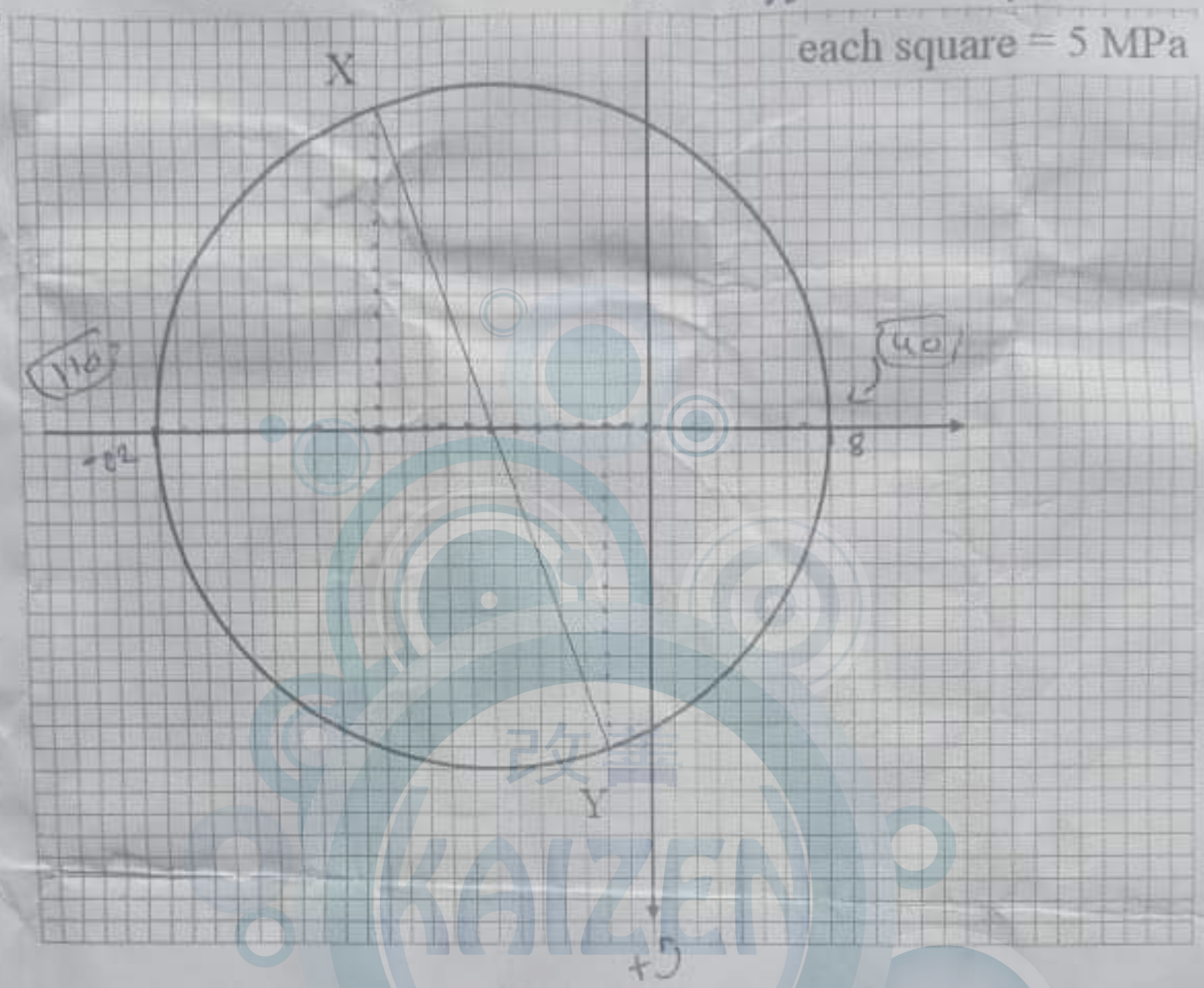
Q1(7P). The Mohr's circle for a stress state is presented below. Determine:

a- the values of σ_{xx} ,σ_{yy} and τ_{xy} for this stress state.

b-the principle stresses

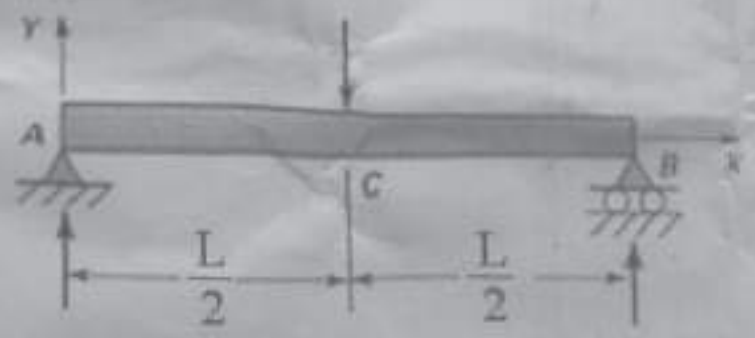
c-the principle angle

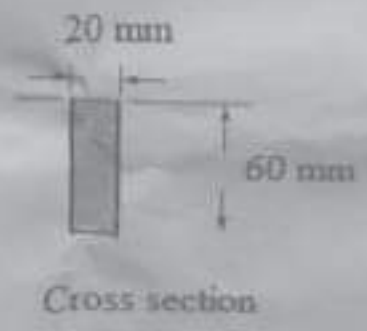


Q2(8P). A simply supported beam of length L =4 m carries a concentrated load 8 *kN* . Find

a-the maximum applied shear stress.

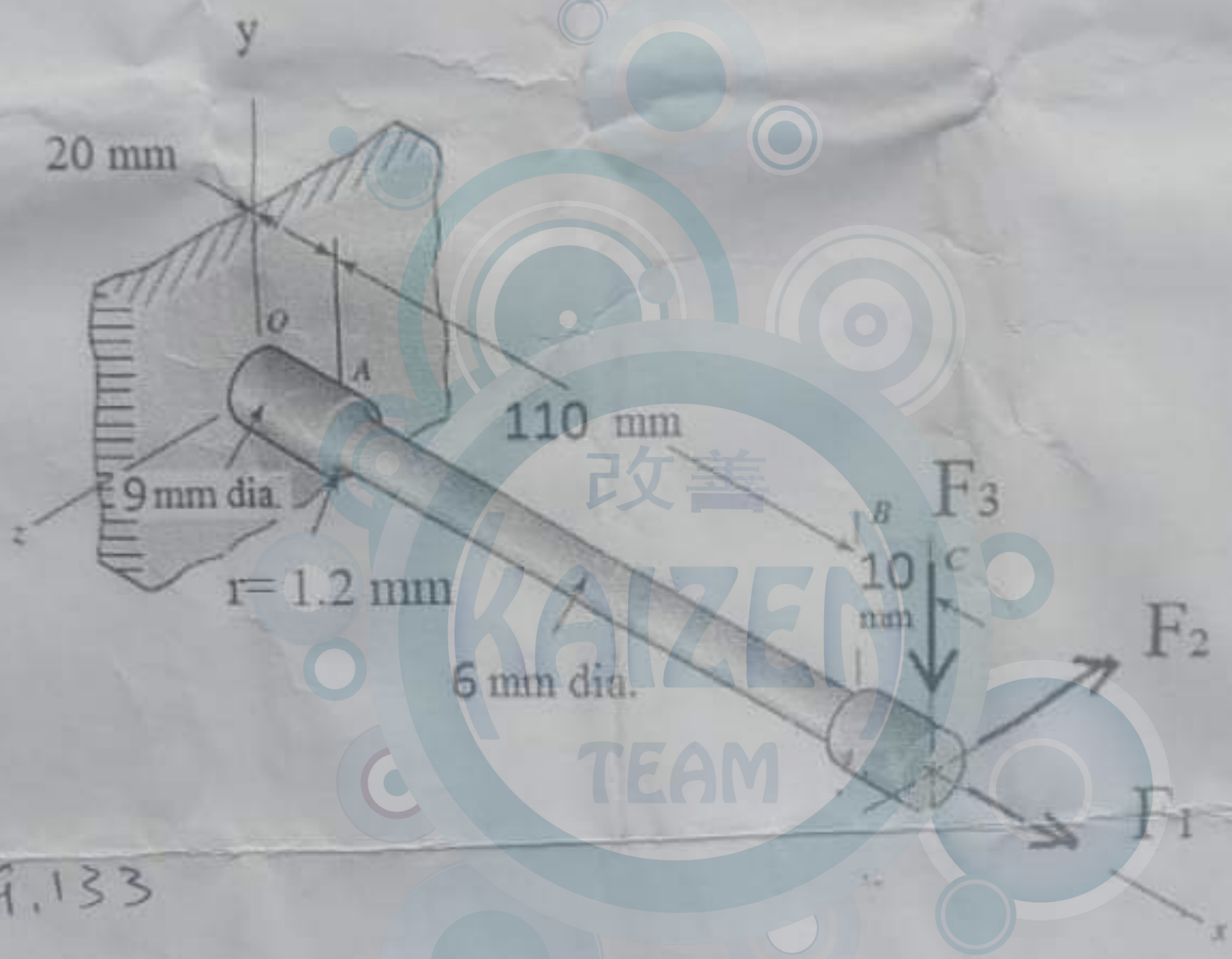
b-the maximum shear stress





Cross section

Q3(15P). The bar in the figure is made of AISI 1006 cold-drawn steel and is loaded by the forces. $F_1 = 500$ N, $F_2 = 3$ kN, and $F_3 = 1$ kN Compute the factor of safety, based upon the distortion energy theory, for the critical stress element of the member shown in the figure. Neglect shear stresses developed from F_2 and F_3



9.133

ct =

n = 1.4