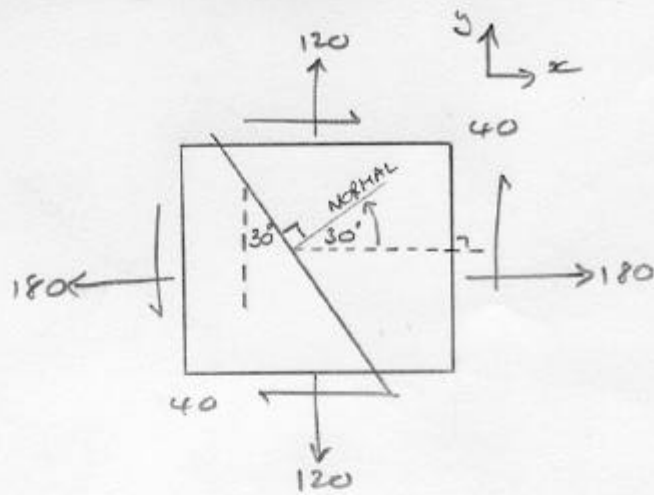


1a



$$\sigma_x = 180 \text{ MPa}$$

$$\sigma_y = 120 \text{ MPa}$$

$$\tau_{xy} = +40 \text{ MPa}$$

PLOT THE POINTS $X(180, -40)$ & $Y(120, +40)$ AND DRAW THE MOHR'S CIRCLE (CENTRE, A) - SEE CHART Q1a.

THE PLANE NORMAL TO OUR PLANE OF INTEREST LIES AT 30° ANTICLOCKWISE TO THE x -FACE (LABELED 'NORMAL', ABOVE).

THUS, FROM THE MOHR'S CIRCLE, ROTATE THROUGH AN ANGLE OF 60° ($2 \times 30^\circ$) FROM AX ABOUT A ANTICLOCKWISE TO POINT

P - SEE CHART Q1a. $P(200, 6)$

THEREFORE: $\sigma_p = 200 \text{ MPa}$, $\tau_p = 6 \text{ MPa}$ CLOCKWISE

(SINCE POINT P IS ABOVE THE ABSCISSA, THE SHEAR STRESS IS CLOCKWISE)