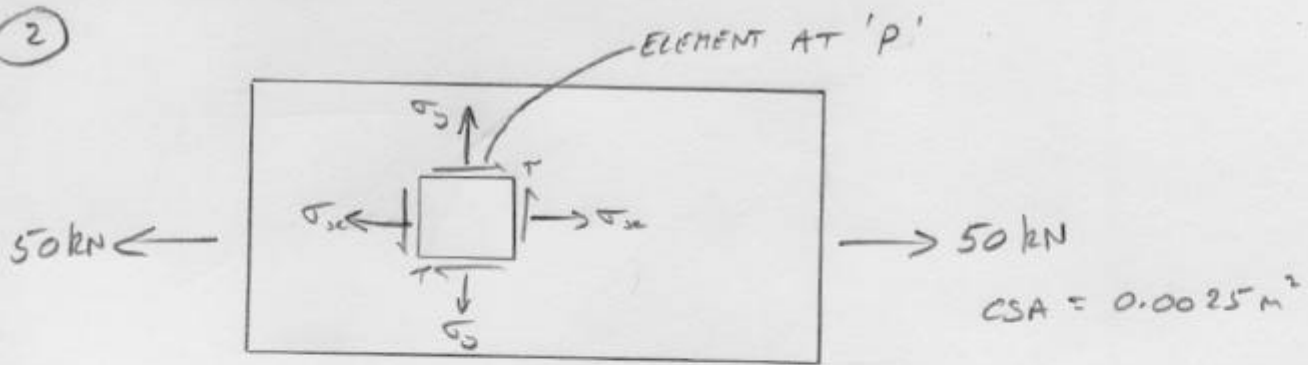


2



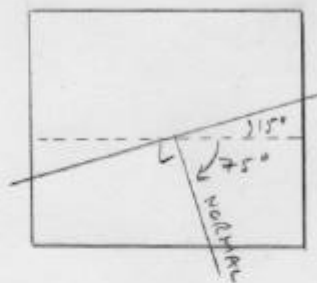
$$\sigma_x = \frac{50 \times 10^3}{0.0025} = 20 \text{ MPa}$$

$$\sigma_y = 0$$

$$\tau = 0$$

PLOT THE POINTS X (20, 0) + Y (0, 0) AND DRAW MOHR'S CIRCLE (CENTRE A) - SEE CHART Q2.

FOR THE PLANE AT 15° TO THE x-AXIS :



y
↑
x

THE PLANE NORMAL TO THE 15° PLANE LIES AT 75° CLOCKWISE TO THE x-FACE. THUS ROTATE THROUGH 2 × 75° ABOUT A FROM AX TO POINT (1) AT (1.5, -5)

THIS REPRESENTS :

$$\sigma_{n_1} = 1.5 \text{ MPa}$$

$$\tau_1 = 5 \text{ MPa ANTICLOCKWISE}$$

BY EXTENDING THIS LINE TO INTERSECT THE CIRCLE ON THE OTHER SIDE OF A WE OBTAIN POINT (2) AT (18.5, 5). THIS REPRESENTS $\sigma_{n_2} = 18.5 \text{ MPa}$ AND $\tau_2 = 5 \text{ MPa}$ CLOCKWISE.

(CONTINUED)