Answers of problems 3

3.1

Principal stresses: $20\left(1+\sqrt{2}\right)$ MPa, $20\left(1-\sqrt{2}\right)$ MPa

Principal plane of stress: 22.5° anticlockwise.

3.2

(a) Principal stresses: 200 MPa, 100 MPa, Principal plane of stress: 26.5° clockwise. The other is omitted.

(b) Principal stresses: 218 MPa, 2 MPa, Principal plane of stress: 16.8° anticlockwise. The other is omitted.