

Answers to 3C7: Mechanics of Solids (2010-2011)

1. (a) $-24.7 \times 10^{-15} p$ (m); where p is in Pa
(b) $93.7 \times 10^{-15} p$ (m); where p is in Pa
(c) $8.88 \times 10^{-6} m$

2. (b)(ii) $|\sigma_1 - \sigma_2| = \frac{3P}{2\pi d}$

3. (a)(iii) $\frac{15\sqrt{3}T}{a^4 G}$

(b)(i) 1.37

(b)(ii) 1.61

4. (a)(ii) $S / \sigma_Y = 1$

(b) $2.76b^2 k$