4C16 2012 Answers

1 (b) (ii) $\dfrac{F}{W} = \dfrac{Kh_0}{B} = \dfrac{h_1 - h_0}{B}$

2 (b) (iii) $h_{max} = \sqrt{13}R, \quad h_{min} = R$

(iv) velocity $\sqrt{3}R\omega$ upwards

acceleration $3\omega^2 R / 2$ downwards

3 (c) (ii) $v_{max} = \sqrt[3]{\dfrac{P + P_d}{c}}$, $v_{min} = \sqrt[3]{\dfrac{P - P_c}{c}}$

(iii) $\dfrac{P_d}{mv_p}$, $\dfrac{-P_c}{mv_p}$