

Solution 4(b)

As follows from

$$h_0 > h_*,$$

the separation, r , should satisfy to the inequality

$$r < r_{max} = \frac{\alpha r_g^2}{2h_* R} = BM^2 R^{-1},$$

where

$$B = \frac{4\alpha G^2}{2h_* c^4}.$$