(a) Consider a space habitat that is too small — a rotating cylinder of radius 4 meters. If a man standing inside is 2 meters tall and his feet are at 1g, what is the g force at the elevation of his head? (10 marks)

(b) Compared to one's height, what should be the minimum radius of the space habitat if the variation in g between one's head and feet is to be less than 1/100g. (10 marks)