

No books, notes or graphing calculators. Please turn off your cell phones. Show ALL your work.

(10) 1. A rectangular box without a lid is to be made from  $100\text{m}^2$  of cardboard.

(a) What is the maximal volume of such a box?

(b) Assume that the box must be at least 10m tall. What is the maximal volume the box in this case?