Question 17 **(6 marks)**

A beverage company has decided to release a new product. 'Joosilicious' is to be sold in 375 mL cans that are perfectly cylindrical. {Hint: $1\ mL = 1\ cm^3$}

(a) If the cans have a base radius of x cm show that the surface area of the can, S, is given by: $S = 2\pi x^2 + \frac{750}{x}$. (2 marks)

(b) Using calculus methods, and showing full reasoning and justification, find the dimensions of the can that will minimise its surface area. (4 marks)