**2** A solid right circular cylinder has height $h$ cm and base radius $r$ cm. The total surface area of the cylinder is $S$ cm$^2$ and the volume of the cylinder is $V$ cm$^3$

(a) Show that $S = \frac{2V}{r} + 2\pi r^2$

**(2)**

Given that $V = 1600$

(b) find, to 3 significant figures, the minimum value of $S$.
Verify that the value you have found is a minimum.

**(7)**

**Question 2 continued**

**Question 2 continued**



**(Total for Question 2 is 9 marks)**