6 An arrangement for producing stationary waves in air in a tube that is closed at one end is shown in Fig. 6.1.

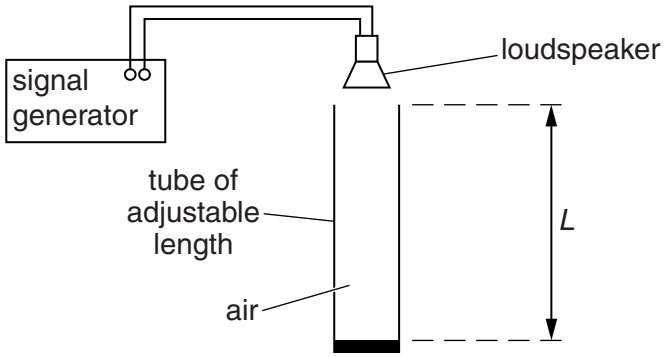

Fig. 6.1

A loudspeaker produces sound waves of wavelength 0.680 m in the tube.
For some values of the length *L* of the tube, stationary waves are formed.

(a) Explain how stationary waves are formed in the tube.

.....

.....

.....[2]

(b) The length *L* is adjusted between 0.200 m and 1.00 m.

(i) Calculate two values of *L* for which stationary waves are formed.

L = ... m and *L* = ... m [2]

(ii) On Fig. 6.2, label the positions of the antinodes with an **A** and the nodes with an **N** for the least value of *L* for which a stationary wave is formed.

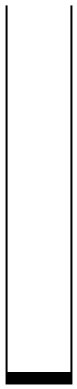

Fig. 6.2

[1]