

- 3 (a) Scientists investigated the relationship between height and the vital capacity of the lungs in people.

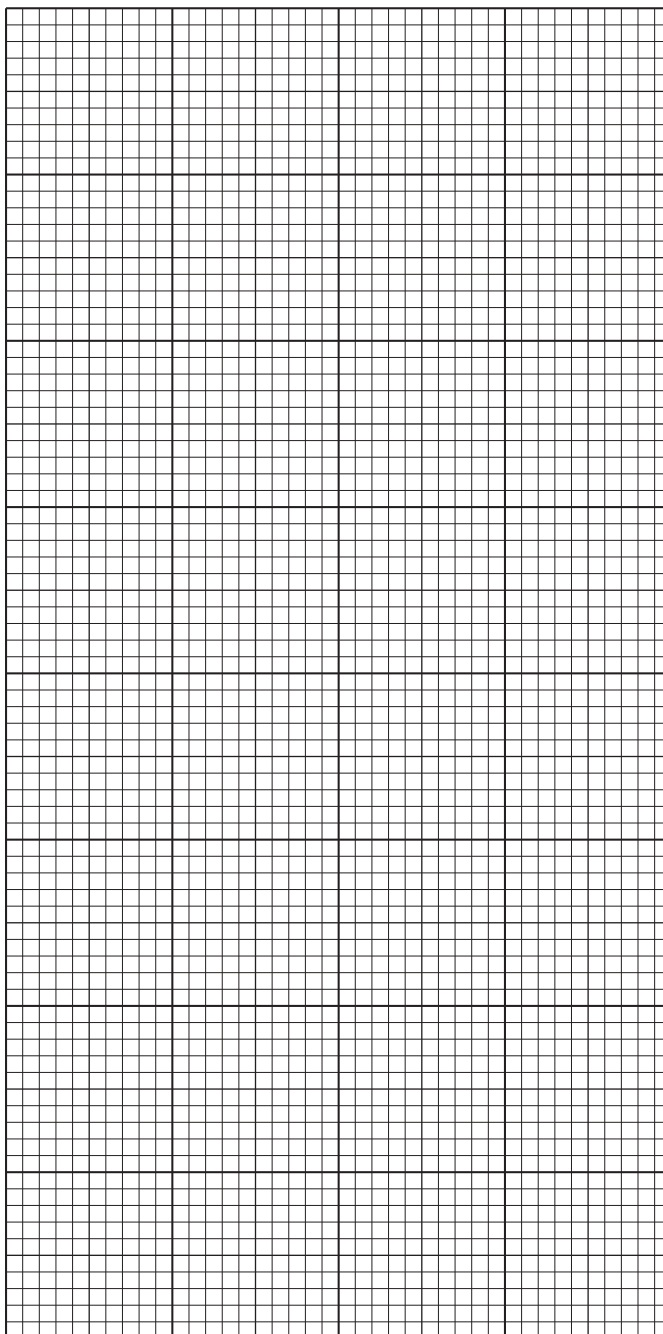
The vital capacity is the maximum volume of air that can be expelled from the lungs after taking the deepest possible breath.

Table 3.1 shows the results of the investigation.

**Table 3.1**

height of the person/cm	vital capacity/dm <sup>3</sup>
130	1.9
140	2.2
150	2.9
160	3.4
170	4.1
180	5.1
190	6.2
200	7.2

- (i) Plot a line graph on the grid of the data in Table 3.1.



[4]

- (ii) Describe the relationship shown in your graph between height and vital capacity.

.....  
 .....  
 ..... [1]

- (iii) Use your graph to estimate the vital capacity of a person with a height of 175 cm.

Indicate **on your graph** how you obtained your estimate.

..... dm<sup>3</sup>  
 [2]

- (b) In people with certain lung diseases, the enzyme elastase is more active. Elastase is a protein.

State the name of the reagent that is used to test for protein.

..... [1]

[Total: 8]