

Question 9

Pulling the strings

7 MARKS

To draw an ellipse Madeleine fixes two pegs at A and B. She fixes one end of a piece of string to the peg at A and the other end of the string to peg B. She pulls the string tight with a stick. She moves the stick keeping the string tight and moves round the two pegs. Her stick traces an ellipse on the ground.

Now look at the diagram on the right.

The major axis of the ellipse is the line whose ends are on the ellipse and which passes through A and B.

The minor axis is the line whose ends are on the ellipse and which passes through the mid-point of AB and which is perpendicular to the major axis.

Madeleine has drawn an ellipse whose axes are of length 15 m and 9 m.

How long is the string and what is the distance AB between the pegs? Explain your answer.

