5

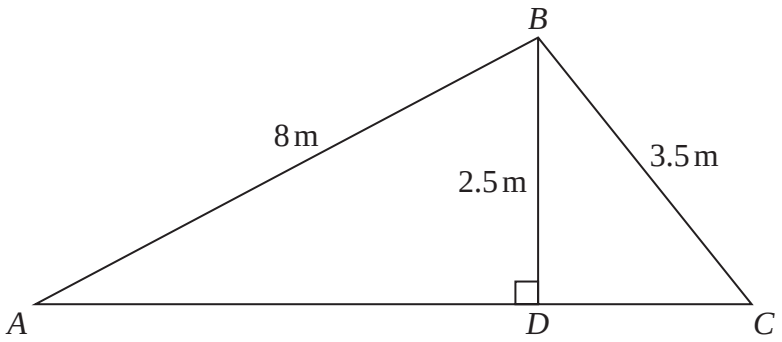

Diagram **NOT** accurately drawn

Figure 1

Figure 1 shows a framework of wooden beams, with ADC a straight line.

$AB = 8\,\text{m}$ $BC = 3.5\,\text{m}$ $BD = 2.5\,\text{m}$ $\angle ADB = 90°$

(a) (i) Calculate, giving your answer to the nearest metre, the length of AC

(3)

(ii) Calculate, giving your answer to one decimal place, the size, in degrees, of $\angle BAD$

(2)

A fourth beam DE is added to the framework.
The point E lies on AB and is such that DE is perpendicular to AB

(b) Calculate the length, in metres to 3 significant figures, of DE

(2)

Question 5 continued

(Total for Question 5 is 7 marks)