9

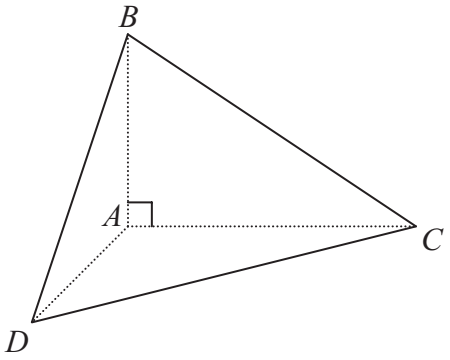

Figure 1

Figure 1 shows a triangular pyramid $ABCD$.

$\angle BAC = \angle DAC = \angle BAD = 90°$

$AD = 5\,\text{cm}$, $AC = 8\,\text{cm}$ and $AB = 6\,\text{cm}$.

(a) Find, in degrees to the nearest 0.1°, the size of $\angle BDC$.

(6)

(b) Find, to 3 significant figures, the area of triangle BDC.

(3)

(c) Find the area of triangle DAC.

(1)

The point E lies on CD so that AE is perpendicular to CD.

(d) Find the exact length of AE.

(2)

(e) Hence, or otherwise, find in degrees to the nearest 0.1°, the size of the angle between the planes DAC and BDC.

(4)

Question 9 continued

Question 9 continued

Question 9 continued

(Total for Question 9 is 16 marks)