6

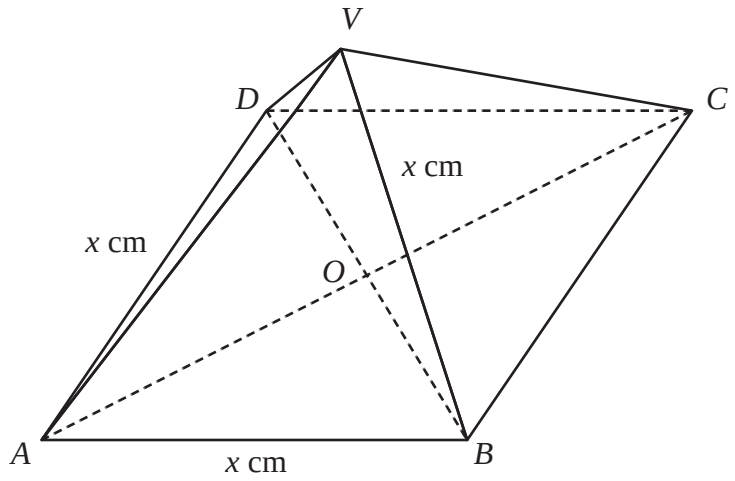

Diagram **NOT** accurately drawn

Figure 3

Figure 3 shows a right pyramid with a horizontal square base.

$AB = BC = CD = DA = x$ cm

$AV = BV = CV = DV = x$ cm

O is the point of intersection of the diagonals of the base.
The vertex V of the pyramid is vertically above O

(a) Show that $VO = \frac{\sqrt{2}}{2}x$ cm

(3)

(b) Find, in degrees, the size of the angle AVC

(2)

(c) Find, in degrees to one decimal place, the size of the angle between the plane VAB and the plane VDC

(3)

The volume of the pyramid is 200 cm^3

Given that the volume of a pyramid $= \frac{1}{3} \times$ base area $\times$ height

(d) Find to 3 signficant figures, the value of x

(3)

Question 6 continued

Question 6 continued

Question 6 continued

(Total for Question 6 is 11 marks)