

The diagram shows the circle $x^2 + y^2 = 2$ and the straight line y = 2x - 1 intersecting at the points A and B. The point D on the x-axis is such that AD is perpendicular to the x-axis.

(a)	Find the coordinates of <i>A</i> .	[4]

(b)	Find the volume of revolution when the shaded region is rotated through 360° about the x-axis.			
	Give your answer in the form $\frac{\pi}{a}(b\sqrt{c}-d)$, where a, b, c and d are integers.			
(c)	Find an exact expression for the perimeter of the shaded region.	[2]		