

The diagram shows part of the curve with equation $y = \sqrt{(x^3 + x^2)}$. The shaded region is bounded by the curve, the *x*-axis and the line x = 3.

(i)	Find, showing all necessary working, the volume obtained when the shaded region is rot through 360° about the <i>x</i> -axis.			

normal to the curve at P crosses the y -axis	the curve with x -coordinate 3. Find the y -coordinate of the point where the real P crosses the y -axis.				
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