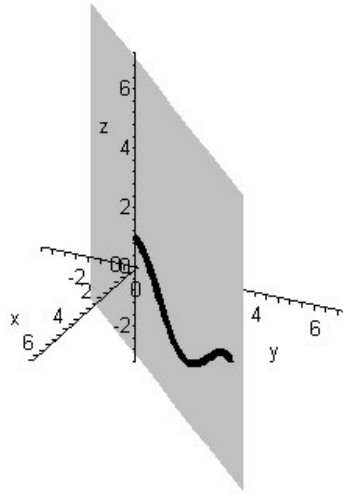


Section 13.1

Graph of the vector function $\vec{r}(t) = \langle t, t, \cos t \rangle$ $0 \leq t \leq 2\pi$

*Note that the cosine curve is traced on the plane $x=y$.

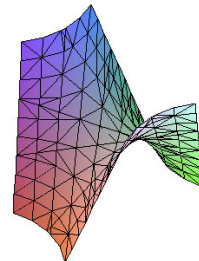
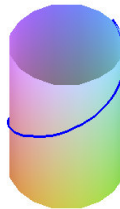
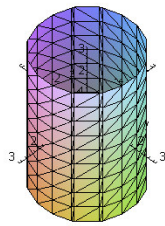


Find the vector function which represents the curve of intersection for the surfaces:

$x^2 + y^2 = 4$: cylinder and the surface $z = xy$

Let $x = 2\cos t, y = 2\sin t$. Then $z = 2\cos t 2\sin t = 2\sin(2t)$

$\therefore \vec{r}(t) = \langle 2\cos t, 2\sin t, 2\sin(2t) \rangle$



The combined surfaces and space curve is shown below

