## Section 14.1

The space curve for $\boldsymbol{r}(\boldsymbol{t})=\left\langle\sin (t), \frac{1}{t-1}, \ln (3+t)\right\rangle$


Two views of the intersection of the plane $x+y=z$ (in green) and the surface $x^{2}+y^{2}=4$, (in red).


The space curve defined by the intersection above:
$r(t)=<2 \cdot \cos (t), 2 \cdot \sin (t), 2 \cdot \cos (t)+2 \cdot \sin (t)>$


## Section 14.2

The space curve $\left\langle t^{2}, t^{3}, \sin (t)\right\rangle$ for $\mathbf{- 1 0} \leq \boldsymbol{t} \leq \mathbf{1 0}$.


Two views of the derivative (tangent vector) of $r(t)$ above, at $t=\pi$.


The tangent line for the space curve above at $t=\pi$ :
$\left\langle\pi^{2}+2 \cdot \mathrm{Pi} \cdot t, \pi^{3}+3 \cdot \pi^{2} \cdot t\right\rangle$


