Write your solution on the exam sheet. Show some work and justify your answer. Do not just give the correct answer. You have 15 minutes. Good luck!

1. Find a vector function that represents the curve which is the intersection of the cylinder $x^2 + y^2 = 4$ and the surface $z = xy$.

   Solutions: $\vec{r}(t) = 2\cos t\hat{i} + 2\sin t\hat{j} + 4\cos t\sin t\hat{k}$.