

Math 3298 Worksheet 13: Review of curves and surfaces.

Group members (2 to 4): \_\_\_\_\_

(1) Consider the curve  $\vec{r}(t) = (t, t^2, t^3 + 1)$ . Find the unit tangent vector when  $t = 1$ .

(2) The above curve lies on the surface  $z = xy + 1$ . Find the equations for (a) the tangent plane at  $\vec{r}(1)$  and (b) the normal line to the surface at that point.